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for the
District of Columbia Circuit

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BRIEF AND APPENDIX
FOR APPELLANTS

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COURT OF APPEALS FOR THE
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IN THE

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA.

No. 8228

944

GEORGE M. FINKES AND THE UNION FORK AND
HOE CO., *Appellants,*

v.

CONWAY P. COE, Commissioner of Patents.

**Appeal from the District Court of the United States for the
District of Columbia.**

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v.

CONWAY P. COE, Commissioner of Patents,

Appeal from the District Court of the United States for the District of Columbia.

BRIEF FOR PLAINTIFFS-APPELLANTS.

This is an appeal by plaintiffs in a civil action brought under Section 4915 R. S. (35 U. S. C. 63). The plaintiffs-appellants are the applicant and assignee, respectively, of patent application serial number 140,329 involved in the suit. The cause was tried before Associate Justice McGuire who found no invention and dismissed the complaint (Appellants' Appendix p~~p~~. 12-~~6~~).

The action was brought on four claims set out in paragraph VII of the complaint (Appellants' Appendix pp. 3-4-

5). This appeal is confined (see Appellants' Statement, Appellants' App. p. 12) to one of those claims, namely, claim 3, which is specific to the precise construction which the record shows has made a decided impression upon the art, and which the court below found has enjoyed considerable commercial success (Finding No. 8, Appellants' Appendix p. 11). The issue is thus considerably simplified.

The facts are generally as stated in the Findings of Fact. The Finkes application relates to an improvement in shovels and specifically to hollow back shovels. The special point of novelty in the shovel is the fact that it has a strip down the center of unusual thickness and about two inches wide, and from there the material of the shovel blade tapers down both ways to the outside edges where it is somewhat less than the usual thickness. The blades are blanked out from strip steel which is rolled in continuous length of the cross sectional contour described. Thus the weight of the shovel is not materially different from that of the conventional hollow back shovel made of sheet metal, such for example as the common scoop shovel.

There is no dispute regarding the merit of the shovel on which patent is sought. Suffice it to say that there is considerable evidence regarding its commercial success. The court below (finding 8) found that the "shovel * * * has enjoyed considerable commercial success." The Examiner in the Patent Office tempered his final rejection (paper No. 12) with the statement that "it is conceded applicant's shovel is of superior quality in every way." Statistical figures regarding sales were given by Mr. Durell, president of plaintiff company (Appellants' Appendix 96 and 97).

THE CHARACTER OF SHOVEL INVOLVED.

There are three kinds of shovels brought out in this record, the hollow back, the strap pattern and the solid shank. Mr. Sarver's testimony, beginning at page 36 of the Transcript, is explanatory of these three types, and it is thought that this deposition should be read in full. Physical Exhibit 2 is a typical hollow back and Exhibits 3, 4 and 5 are examples of strap pattern shovels.

The difference between the hollow back and the strap shovel has to do with the way that the handle attaching means joins the blade. The hollow back has an integral socket. Since the socket is tubular the adjacent metal of the blade has to be concavely shaped to merge into the socket. This forms the frog 7 (see drawings of application) which is so named because of its resemblance to the frog of a horse's hoof. The connection between the frog 7 and socket 9 is known as the shank.

This concavity is the reason for the name applied to hollow back shovels. It constitutes an element of weakness. There is a liability of its breaking along the edges of the triangle. This is exemplified in Exhibit 2 and was explained by Sarver (Appellants' Appendix 71).

As compared with this the strap shovel does not have a tubular socket merging into the blade. There is therefore no frog. As the name implies, the handle is attached by straps (Sarver Appellants' Appendix 70). The two straps are attached, usually by welding, sometimes by riveting, one to the front face and one to the back face of the shovel blade. The straps are transversely curved to fit on the handle and are attached thereto by rivets.

Because of the weakness of hollow back shovels there has been a prejudice against them. Mr. McKee testified (Appellants' App. 52):

> "Q. Why did you not handle many hollow-backs? Can you tell?
>
> "A. For the reason that there was a prejudice against them on account of their weakness. They would not stand up."

Mr. Sarver testified (Appellants' App. 63-64):

> "Lots of people have told me that a hollow-back shovel would not be accepted by the contracting trade for the reason that it would not stand up; and in all my experience with the contracting trade, I would safely

> say that 75 per cent of the shovels used by the contractors which I have contacted practically all over the country, more particularly in the East, were using a solid shank shovel."

The shovel here in issue is of the hollow back type. However it has the special characteristic cross sectional contour which distinguishes it from the conventional hollow back. It is called the "Razor Back" after the hog of that name which has a prominent back bone (Durell, Appellants' App. 94). But the thing to keep in mind is that this is not just a line or a rib of maximum thickness, as shown in the prior art patents relied upon, but is a strip wide enough to take in the vulnerable part of the shovel blade from which the blade tapers down uniformly to the opposite edges.

The specification describes this as follows:

> "The strip and hence the section blank 1 are of the maximum width of the shovel blank so that the shovel may be blanked therefrom with minimum waste of material. A suitable commercial width is 10 inches. The strip is of variable thickness, being greatest at its center. In the form shown it is flat on one side and the other side tapers oppositely from a maximum thickness at the center to a minimum thickness at the edges. A central longitudinal zone or region between the lines *a* and *b*, say about 2 inches wide, is of uniform thickness, say about 86 thousandths of an inch, and the thickness then tapers down uniformly to a minimum at the edges where the thickness is, say, 54 thousandths of an inch."
>
> * * * * * * * * *
>
> "The thicker central zone thus runs from end to end of the shovel and reinforces the entire socket and shank section and the frog where breakage is most likely to occur, and also provides the extra metal at the front end where, especially in a pointed shovel, it customarily wears away."

This reference to the wearing away at the point is to an additional advantage of the Finkes construction. The tendency of round pointed shovels to wear away at the point is illustrated in the Exhibits 2 and 3. That objectionable quality is of course present in both hollow back and strap pattern shovels (Sarver, Appellants' App. 64, 65). The greatest wear is at the center of round pointed shovels, and as they wear back they assume a concave, or as the witness said, moon shape (see also Durell, Appellants' App. 98). This is well illustrated in Exhibits 2 and 3.

The continuance of this two inch strip of extra thickness right down to the point retards this wear, and also causes the shovel edge as it does wear back to keep its original shape (Exhibit 7, Sarver p. 57).

Claim 3, the claim in issue, reads as follows:

> "A shovel of the hollow back type consisting of a single piece of strip steel including a blade section and a tubular shank and socket of circular cross section, the strip steel having a central longitudinal portion of a width substantially one-fifth that of the back edge of the blade and of uniform thickness and tapering down laterally therefrom to the opposite edges, the said central portion extending the entire length of the shovel whereby the blade section has a reinforced longitudinal central portion including the frog of greater thickness than the side portions and the shank and socket are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade."

APPELLANTS' CONTENTIONS.

This Court has made it abundantly clear in its decisions since and including *Abbott* v. *Coe*, 109 Fed. (2d) 449, that it will not substitute its judgment in these cases for that of the officials of the Patent Office if the finding that there was no invention is consistent with the evidence; that "the judicial function is exhausted when there is found to be a rational basis for the conclusions approved by the administrative body." Such pronouncement has been repeated in *Minnesota Mining & Manufacturing Co.* v. *Coe*, 118 Fed. (2d) 593 and in *General Motors Corporation* v. *Coe*, 120 Fed. (2d) 736.

However we do not deem that the fact that the Patent Office has made a finding of want of invention and that the District Court has made a similar finding is necessarily conclusive of the matter. This Court will still review the evidence and determine whether or not the finding of no invention, which is a finding of fact (*Abbott* v. *Coe, supra*) is consistent with the evidence. While there is a presumption of correctness in the decision of the Patent Office, the doctrine of "stare decisis" does not apply, and if there is found to have been error on the question of anticipation, the findings and conclusions of the trial court and of the Patent Office will be overruled. *Poulsen* v. *Coe,* 119 Fed. (2d) 188, 200.

It is appellants' contention

1. That the trial court and the Patent Office, having concluded, erroneously as we think, that there was no invention in view of the prior art in the broad idea of variable thickness in cross-section of a hollow back shovel blade uniformly varying from a minimum at the edges to a maximum in the longitudinal center, failed to give adequate consideration to the specific construction of appellants' commercial shovel as it is shown in the drawings and described in the specification and particularly pointed out in claim 3.

2. That the prior art does not anticipate this particular construction.

3. That the record leaves no doubt as to the essential merit of the construction.

4. That there are present all the accepted indicia of invention in the subject matter of claim 3.

5. That claim 3 is patentable.

PROBLEM IN PRODUCING THE SHOVEL.

On paper it appears that there was no real problem in making the shovel. In Finding of Fact No. 6 (Appellants' App. 10, 11), the trial court found that French patent No.

19,349 to Hassel "discloses the rolling of strips from which shovel blades are cut, the strips varying in transverse cross section."

The disclosure of that French patent is very vague. Certain it is that it had added nothing to the practical knowledge of the art. Finkes' idea was to roll continuous strips of the desired cross section but Mr. Durell told of the difficulty they encountered after laying it out on a drawing board, in getting a rolling mill to undertake to do it (Appellants' App. ~~98~~).93

Mr. Jones who had had many years experience in rolling mill practice and for fifteen years had been works manager for the rolling mill that did accomplish the rolling of the strip, told the story (Appellants' App. 53 *et seq.*). To appreciate the difficulty it is necessary to keep in mind that shovels of this type which handle dirt and gravel, are made of high carbon steel. Mr. Jones explained this term (Appellants' App. 54, 55). To his knowledge no one had ever before rolled steel with a carbon content of one-half of one per cent or higher to as thin a section as .054 of an inch, nor maintained a difference in thickness of .030 of an inch between two zones within a tolerance of .003 of an inch. Water has to be constantly poured upon the rolls, and such a thin section cools so fast, he said, as to make it extremely difficult to prevent the edges from becoming wavy or of a washboard effect, as he said. Other mills, one after another, had refused to try (Durell, Appellants' App. 93). These included such concerns as American Rolling Mills and Republic Steel Company. Mr. Jones was works manager of The West Leechburg Steel Company, later merged with Allegheny Ludlum Steel Company. He had had some experience with a job for Ford Motor Company which made him think he might be able to do it. He did succeed, not with the first draw but eventually. This accomplishment was doubtless unprecedented.

These strips of the varying thickness transversely are rolled in just the right width to make the shovel blade. As stated they are in most cases 10 inches wide. The central longitudinal strip of maximum thickness is one-fifth of the total width, or two inches wide. From .086 of an inch in thickness it tapers down to .054 of an inch. The strips are rolled in lengths, and the blades are blanked out and shaped in dies, as described in the specification.

THE PRIOR ART.

The art on which the claim has been refused is wholly paper patent art. Before taking them up for individual consideration the Court should know what the practical art was.

The Solid Shank (Skelton) Shovel: Exhibit 8 is a specimen of this shovel. It is made according to the Skelton patent No. 757783 (Exhibit 9). This is an individual forged job. From a T-shape blank the shovel is finally produced by heating and forging. This was the trade's answer to a demand for a better shovel than the hollow back or strap shovel. It is virtually hand made. It is true, as the Skelton patent says, that "the parts are strengthened at those points where the most strain is met with," but at a tremendous increase in cost. Before the Razor Back this was the only shovel that would stand the strain of heavy work, such as prying in use by railroad track workers. However it was not thicker along a central zone to the point and hence would wear off at the point like the usual hollow back (Durell, Appellants' App. 98).

The Milligan Shovel: This is the shovel of patent No. 1,898,590, Exhibit 10. It came out in 1933 but lay dormant until after the Finkes shovel appeared. Then American Fork and Hoe Company brought out their so-called Taper Forged shovel to meet the competition (Sarver, Appellants' App. 76). This Taper Forged shovel is made exactly in accordance with and in fact is made under this Milligan patent.

The thing to note is that this Milligan shovel is also an individual forged proposition. Unlike the solid shank it is a hollow back shovel. But what Milligan teaches is the making of a triangular area including the frog of extra thickness and then tapering it down in all directions.

It is pertinent to ask, why, if it was so obvious to do what Finkes did and is trying to patent, did Milligan in 1933 go to such an expensive forged shovel to get a reinforcement of the frog material? That Milligan recognized the problem solved by Finkes is clear from the following excerpt from page 1 of his patent:

> "The open back or so-called hollow back shovel has commonly been made from sheet steel and the socket, shank and blade of these shovels are of the same thickness. The shank of the shovel is united to the blade by a ridge or frog formed in the blank to strengthen the shovel at the junction between the shank and the blade. The ridge or frog extends well forward into the blade, approximately one-half of the distance between the back or shoulder of the blade and the front edge of the blade. Although this type of shovel is less expensive to manufacture than the solid shank shovel, there is considerable waste of material. The shovel itself has many disadvantages, among which is the fact that it is weak at those points where it needs strength, particularly at the junction between the shank and blade where the metal has been drawn to form the frog. These shovels, in use, frequently crack and break along the edge of the frog joining the shank and blade."

Except for the Lowman patent, discussed later, this Solid Shank shovel and the Milligan shovel are the only ones of the prior art patents that ever came into commercial production. What they do is to bring out into bold relief the extreme simplicity and merit of the Finkes contribution.

Myers patent No. 340,602: This is part of defendant's exhibit. Mr. Sarver testified about this, beginning at page 67. It is presumed to be made from blanks produced as shown in the companion Myers patent No. 340,607, plaintiffs' Exhibit 15. The patent teaches forging it from "any of the known forms of blanks." Myers is supposed to produce a strap shovel but how he gets his two straps from the blank we are not told. Mr. Sarver, the expert, said he would not know. Yet if we look at Fig. 5 we see two straps which must have come into being by magic. There is no apparent way to convert the construction of Figs. 1, 2 and 3 into that of Fig. 5.

It is true that Myers teaches a shovel blade that tapers from minimum thickness at the edges to maximum thickness at the longitudinal center. And he says (p. 1, ll. 72-77):

> "The greatest strain on the shovel-blade, and also on the straps, is always at, along, and on the longitudinal center line of the blade and straps; hence it will be apparent that the greatest thickness of metal should be at that part of the blade and straps."

He was talking of strap shovels. There is no frog with its inherent weakness. Consequently he does not tell how to overcome the weakness of a frog construction. Finkes' claimed construction of a central strip of uniform thickness wide enough to take in the frog and shank is not revealed. Indeed Myers has neither a frog nor a shank.

Not only do we have the testimony of Sarver that one cannot make a Myers shovel according to the teaching of his patent, but we have the testimony of Henry M. Myers, a grandson of the patentee, that he was around his grandfather's plant in 1886 and inherited the business and was always in it till it was sold, and he never knew of the shovel of the patent being made. While that testimony is negative in character it leaves the unavoidable conclusion that no such shovel ever was made; for if it had been made he must have known it.

Clearly the Myers patent does not anticipate the claim in issue.

Lowman patent No. 142,859: This is also a file reference and one of the items of defendant's exhibit (Appellants' App. 38). It too is an old patent, dating back to 1873. It teaches the stamping of a hollow back shovel from sheet metal. It probably is the original patent on the hollow back shovel.

The significant part of the disclosure is the statement on page 2 as follows:

> "* * * although I prefer to use sheet metal of one equal thickness, nevertheless it will be obvious that the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the article, when made, will be exposed to the greatest strain."

Appellants contend in the first place that such a general statement can have no anticipative force. The rule is well stated in *Canda* v. *Michigan Malleable Iron Co.,* 124 Fed. 486, 492, as follows:

> "Nor can we think that the existence in the Patent Office of something which might merely supply a hint, but was not specifically described or claimed as intended to be covered by a patent, ought to be held as an anticipation of an otherwise valid invention. Inventors are not precluded by the embryonic and shapeless ideas found in former patents, any more than they are by such undeveloped matter existing elsewhere."

Secondly, the patent most certainly does not teach a central strip of super thickness wide enough to take in the frog and shank and running right down to the point, with the metal tapering down to a minimum thickness at the edges. That is what the application teaches. That is what the claim calls for. The Lowman patent falls far short of being an anticipation.

Surbaugh patent No. 1,083,952: This is also a defendant's exhibit. It was relied on by the Patent Office Examiner. It teaches a hollow back shovel with a rib down the center. Mr. Sarver explained that such a construction would have no practical value (Appellants' App. 82-85). The objection to such a rib is obvious.

But the point is that Surbaugh's purpose was entirely different from that of Finkes. He wanted to stiffen the blade. What that would mean in practical use Mr. Sarver explains. It is just the antithesis of what is desirable. The blade must spring to be useful. But Surbaugh says that

that springing crystallizes the metal at the line around the frog (p. 1, l. 79). True enough. So he proposed to prevent springing. He puts a rib with abrupt walls down the middle and then it can't spring. That is his solution.

Finkes on the other hand does nothing to prevent the springing or flexing of the metal. That quality is left unimpaired (Durell, Appellants' App. 99). The construction which he describes and claims has no relation to the Surbaugh shovel.

Hassel French patent: This patent has been referred to above in connection with the discussion of the rolling problem. It purports to disclose a rolling mill wherein shapes are rolled by several passes through three high and two high mills. The passing is successive, not continuous. Out of it is supposed to be obtained the shapes, for example, shown in Figs. 7 to 21, inclusive. Among the articles mentioned to be obtained from these are plow shares and spades or shovels. A fair translation of the sentence, lines 6 to 8 of page 3, is: "From the piece *p* so obtained, fig. 13, one then gets by stamping a blade of a shovel *q*, fig. 14."

Defendant contends that in addition to the form of fig. 14 with a central rib comparable to Surbaugh, the patent teaches the use of any of the other forms shown, for example, that of fig. 18, to make shovel blades. Even if we accept that this is a logical deduction (certainly the patent does not disclose it), still it fails as an anticipation. The article is nothing but a spade. There is no frog. There is no central strip of uniform thickness with a taper therefrom to a minimum thickness at the edges. The patent does not clearly and completely disclose the article claimed. *Trussell Mfg. Co.* v. *Wilson-Jones Co.,* 50 Fed. (2d) 1027, 1029.

THE FINDING THAT CLAIM 3 DOES NOT DEFINE INVENTION OVER PRIOR ART IS NOT CONSISTENT WITH THE EVIDENCE.

Admittedly what is and what is not invention is in the last analysis a matter of personal opinion, and as Judge Learned Hand said in *Kirsch Mfg. Co.* v. *Gould Mersereau Co. Inc.*, 6 Fed. (2d) 793, 794, the judgment is in that sense arbitrary. We believe that the Court below erred on the question of anticipation and that when a proper understanding of the prior art is had, there is at least a doubt of the correctness of the conclusion of law that claim 3 is invalid. Doubt will be resolved in favor of the applicant. This Court so announced in *In Re Coykendall,* 29 Fed. (2d) 868, 870:

> "It may be added that in doubtful cases it is the established rule in this court to resolve the doubt in favor of the applicant. (Citation)".

The oral evidence may be briefly summarized as follows:

Nobel Jones (Appellants' App. 53). The rolling of such light sections in high carbon steel which requires use of cooling water flowing over rolls whereby thin sections are quickly chilled, was without precedent and of doubtful possibility. The reasons therefor he explained at length. His efforts at The West Leechburg Steel Company were successful and that company (now Allegheny Ludlum Steel Company) has been rolling the strips since for plaintiffs.

The Lowman patent teaches stamping hollow back shovels out of sheet metal, and therefore the reference to rolling it of uneven thickness to provide strength where exposed to the greatest strain is meaningless, since sheets are rolled successively in directions 90° to each other and so must be of uniform thickness.

Bryce B. Sarver (Appellants' App. 61). Long experienced in the production of shovels, he went with The Union Fork and Hoe Company to start the manufacture of this new shovel. After he got it going he went out to sell it and has been selling since. He told of the marked success of the Razor Back. He described the hollow back, strap pattern and solid shank shovels. He expatiated on the inherent weaknesses of the hollow back shovel and how the Razor Back overcame those weaknesses. He told of the way competitors imitated but showed respect for the Razor Back improvement.

He discussed the Myers patent and showed that a shovel could not be made by its disclosure. He explained that straps are always made of low carbon steel, otherwise they would be too springy and could not be shaped to the handle. Yet the strap extension of the Myers patent would be the same consistency as the blade. Moreover he pointed out that the patent does not teach how the second strap would be obtained, nor how the thicker central line could include both straps.

He discussed the Surbaugh patent and pointed out that a rib with abrupt walls would merely prevent flexing of the blade. He pointed out how this would result in two half moons, one on each side of the rib, being formed in the point of the shovel as it wore back.

Henry M. Myers (Appellants' App. 90). He was a boy around his grandfather's plant in 1886 and worked at that plant in Beaver Falls, Pa., all his business life. He went into business with his grandfather in 1897 and later became head of the business, which he was till it was sold. He never knew of a shovel like that of the Myers patent being made.

R. D. McKee (Appellants' App. 50). Jobbing and retail hardware business in Hagerstown, Maryland, for forty-nine years. He had refrained from handling hollow back shovels because of a prejudice against them until the Razor Back came which he has sold with marked success.

Edward Durell (Appellants' App. 92). President of The Union Fork and Hoe Company. He explained how the Finkes improvement came into being and the difficulty his company had in getting a mill to roll the section. He gave details about the commercial success of the Razor Back shovel. He told of the superior wearing qualities of the shovel. He told about the conduct of competitors.

We submit that not only was the finding of no invention in claim 3 inconsistent with this evidence, but that it was inconsistent with the District Court's findings of fact. We have no substantial quarrel with any of the nine findings of fact. We contend they do not go far enough.

The trial court refused to find, for example, in connection with the Surbaugh patent (finding 5) that the central rib would stiffen the blade and prevent flexing and hence crystallizing of the metal. It refused to find that plaintiffs had offered testimony to that effect. The findings of fact were trimmed to the conclusions of law instead of the reverse.

The trial court refused to find with respect to the Myers patent (finding 4) that the patent was silent as to how the second strap comes into being. It found that one of the straps is integrally attached to the blade. The patent shows both integrally attached.

The trial court refused to make any finding based upon Mr. Jones' testimony as to how sheet metal is rolled (Appellants' App. 59), namely that it is rolled from a bar which is successively turned 90°.

The trial court refused to make a finding that the prior art does not disclose a shovel of the hollow back type and responding to the definition of claim 3. Nevertheless that is the pertinent and, to our mind, controlling fact. The court made a finding (No. 7) that in view of the teaching of the Myers patent it was not invention to devise a shovel that responds to the definition of claim 1.

We have taken no appeal on that claim. But how about claim 3? To meet it we have to find a hollow back shovel, not a strap shovel for a strap shovel does not have the frog with its inherent weakness to contend with. We have to have a cross section that has a strip of uniform thickness wide enough to take in most of the frog and shank. This width of uniform thickness has to continue right down to the point, and thus cause it to retain its shape as it wears back (see Exhibit 7). It has to taper from the opposite edges of that central strip without any shoulder down to the opposite edges.

That is what claim 3 defines. And the prior art does not have it. Let us examine the conclusions of law of the court below (Appellants' App. 9).

First the court concluded that all four of the claims are anticipated by the Lowman patent and by the Surbaugh patent. That conclusion is obviously inconsistent with the facts, at least so far as claim 3 is concerned. Giving full credit to Lowman's vague reference to making the shovel thickest where it is exposed to the greatest strain, and disregarding the testimony of Jones that no way had been known to roll steel for making shovels to a variable thickness at so thin a section and maintain the required tolerances, and his further testimony that the way sheet metal is made it would be impossible to roll such a section anyway, still it is obvious that a contour such as Milligan later patented would have come within Lowman's general statement. Hence that statement cannot be said to anticipate a claim which defines the strip steel of the shovel blade as "having a central longitudinal portion of a width substantially one-fifth that of the back edge of the blade and of uniform thickness and tapering down laterally therefrom to the opposite edges". That is a specific definition of a particular construction that has been proven to have great merit.

Clearly the shovel of the Surbaugh patent with its narrow stiffening rib down the center raised substantially above the general surface with abrupt side walls, falls equally short of anticipating claim 3.

One trouble is that there has been too much generalizing in this case. The attitude throughout which was reflected by the trial court has been that the prior art taught reinforcing shovel blades by providing extra thickness at weak places, and hence that applicant had merely borrowed from the prior art. No official has particularized. The tendency has been to class all the claims together and to sweep them collectively into the slough of rejection. No one has ever attempted to account for the rejection of claim 3. It was just in bad company and hence fell with the rest.

This is particularly apparent when one considers finding of fact No. 7 and the second conclusion of law. The conclusion is that if the four claims are not anticipated by Lowman and Surbaugh, nevertheless they are not patentable over those patents in view of Myers and Hassel. But finding No. 7 which relates to the Myers patent is extremely general. It quotes the language of claim 1 and says that in view of Myers that was not patentable. The Myers shovel is of the strap type and hence does not have the problem solved by Finkes in a hollow back shovel.

The central strip of uniform thickness and wide enough to comprehend substantially the frog and shank of the shovel is not revealed in the prior art. The Patent Office granted a patent on Milligan's construction for reinforcing the frog by a triangular thicker portion in a forged shovel. The evidence is all in favor of invention in Finkes' construction with its central longitudinal strip between the lines *a* and *b* of uniform thickness and then tapering down to the opposite edges. No reason has been given for disallowing claim 3. Its disallowance is inconsistent with the evidence.

CONCLUSION.

The Canadian Patent Office has granted the corresponding patent (Appellants' App. 100). It is merely suggested that this is entitled to be weighed in the considerations of this Court. The extraordinary success that the shovel has met with in the trade, and is proven superiority and sturdiness in use are entitled to weight. The evidence is clear and conclusive that the Razor Back has revolutionized the shovel industry. Finkes has given the trade a shovel as strong as the Solid Shank shovel for the price of the conventional hollow back. The trade has seized upon it. Competitors have been quick to imitate it. All of the recognized indicia of invention are present.

It is believed that the prior art does no more than evidence a recognition of the problem. Lowman hinted at a solution. Myers in a bungling way showed a shovel blade of a cross section that tapered down from a central line. He was not concerned with the weakness of a frog for the strap shovel does not have it. Surbaugh recognized the problem but his solution was to provide a rib and hence prevent flexing.

This appeal is concentrated upon the claim that is limited to the precise construction of the commercial shovel. Its patentability is believed to be entirely consistent with the evidence. A reversal of the judgment with respect to claim 3 is solicited.

Respectfully submitted,

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FOR THE DISTRICT OF COLUMBIA.

No. 8228.

GEORGE M. FINKES AND THE UNION FORK AND
HOE CO., *Appellants,*

v.

CONWAY P. COE, Commissioner of Patents.

Appeal from the District Court of the United States for the
District of Columbia.

APPENDIX TO BRIEF FOR APPELLANTS.

PLEADINGS, DOCKET ENTRIES AND OTHER PAPERS DESIGNATED BY APPELLANTS.

1 Endorsed: Filed Jul 22 1940 Charles E. Stewart, Clerk

In the District Court of the United States

For the District of Columbia

Civil Action #7728

GEORGE M. FINKES and THE UNION FORK AND HOE COMPANY, Address both Plaintiffs c/o The Union Fork and Hoe Company, Columbus, Ohio., 500 Dublin Avenue, *Plaintiffs,*

v.

CONWAY P. COE, Commissioner of Patents, *Defendant.*

Bill of Complaint.

To the Honorable the Judges of the District Court for the District of Columbia.

George M. Finkes and The Union Fork and Hoe Company, bring this their bill of complaint and state as follows:

I. That the plaintiff, George M. Finkes, is a citizen of the United States and a resident of Columbus, in the County of Franklin, and State of Ohio, and the plaintiff, The Union Fork and Hoe Company, is a corporation organized and existing under and by virtue of the laws of the State of Ohio, and has its principal place of business in the City of Columbus, in the State of Ohio.

II. That this is a suit brought in accordance with the laws of the United States as provided for under Revised Statute Sec. 4915.

III. That heretofore, and on or before the 3rd day of May 1937, the plaintiff, George M. Finkes, being then
2 a citizen of the United States, was the true, original and first inventor of certain new and useful improvements in Shovel, not known or used before his invention thereof and not at the time of his application as hereinafter set forth, in public use or on sale for more than two years.

IV. That the said invention is more fully and specifically embraced in the several claims of the application for letters patent of the United States filed in the Patent Office of the United States by the plaintiff George M. Finkes, including those hereinafter recited.

V. That on or about the 3rd day of May 1937, the said George M. Finkes, being the inventor as aforesaid, and a citizen of the United States, made application to the Commissioner of Patents for letters patent of the United States, application Serial No. 140,329, said application being made in accordance with the then existing Acts of Congress and complying in all respects with all the requirements of the law in such case made and provided.

VI. That coincidentally with the execution of the aforesaid application for letters patent, the said George M. Finkes did on or about the 27th day of April 1937, by an instrument in writing, assign and set over unto the plaintiff, The Union Fork and Hoe Company, the entire right, title and interest in and to the aforesaid invention, the application for letters patent thereon, and letters patent to be obtained thereon, which assignment has been duly recorded in the records of the United States Patent Office, Liber P170, page 587.

VII. That the aforesaid application was passed upon by the Primary Examiner who refused to allow all of the claims originally filed in said application, which claims are as follows:

3 1. A shovel of the hollow back type consisting of a single piece of strip steel having a uniform cross section throughout its length but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges, and comprising a blade and a tubular socket and a hollow shank portion connecting the socket with the blade and forming a continuation of the frog portion of the blade, whereby the shovel is substantially reinforced throughout a central longitudinal region

comprising the frog, shank and socket and extending to the front edge of the blade.

2. A hollow back shovel of the type described consisting of a single piece of strip steel including a blade section and a tapering, tubular shank and socket section of circular configuration in cross section, the strip steel having a central, longitudinal portion of sufficient width to include the frog and the line of junction between the blade and shank, and of substantially uniform thickness greater than that of the portions on each side thereof, the said central portion extending the entire length of the strip steel whereby the blade section of the shovel includes a reinforced, longitudinal central portion of greater thickness than the side portions and the frog and the shank and socket section are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade.

3. A shovel of the hollow back type consisting of a single piece of strip steel including a blade section and a tubular shank and socket of circular cross section, the strip steel having a central longitudinal portion of a width substantially one-fifth that of the back edge of the blade and of uniform thickness and tapering down laterally therefrom to the opposite edges, the said central portion extending the entire length of the shovel whereby the blade section has a reinforced longitudinal central portion including the frog of greater thickness than the side portions and the shank and socket are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade.

4. A shovel of the hollow back type consisting of a single piece of strip steel with the grain running longitudinally thereof and having a uniform cross section throughout its length but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges, and comprising a blade and a tubular socket and a hollow shank portion connecting the socket with the blade

and forming a continuation of the frog portion of the blade, whereby the shovel is substantially reinforced throughout a central longitudinal region comprising the frog, shank and socket and extending to the front edge of the blade.

These claims he finally rejected in accordance with the rules of the Patent Office.

4 VIII. That thereupon an appeal was taken from the final rejection of the Examiner to the Board of Appeals, the said Board of Appeals having heard the same, and as plaintiff alleges, erroneously affirmed the Examiner on February 3, 1940.

IX. That no appeal has been taken to the Court of Customs and Patent Appeals.

X. That the Commissioner of Patents, by the Board of Appeals, erroneously contends that the invention as defined by the claims hereinbefore recited in Paragraph VII hereof, is disclosed in the following letters patent of the United States:

Patentee	Number	Date
Lowman	142,859	Sep. 16, 1873
Myers	340,602	Apr. 27, 1886
Surbaugh	1,083,952	Jan. 13, 1914
Hassel (French)	19,349	Aug. 26, 1912

and the Commissioner of Patents has refused and still refuses to grant letters patent upon the said application of George M. Finkes for the invention embraced in the aforesaid claims though the plaintiff, The Union Fork and Hoe Company, is lawfully entitled thereto.

Wherefore, the plaintiffs bring this suit in accordance with the provisions of the Statute in such cases made and provided, and pray this Honorable Court:

1. To decree that George M. Finkes is the true, original and first inventor of the subject matter as specified in Paragraph VII hereof and contained in his application for letters patent as aforesaid.

2. To direct the Commissioner of Patents to issue to The Union Fork and Hoe Company, as assignee of the said

George M. Finkes, a patent containing the claims recited in Paragraph VII hereof, and such other claims as
5 upon hearing the Court may find patentable.

GEORGE M. FINKES,

THE UNION FORK AND HOE COMPANY,

By L. H. HERSEE,

(SEAL) *Secretary*

CHARLES J. DILLER,
Solicitor for Plaintiffs,

620-4 Washington Loan & Trust Bldg.,
Washington, D. C.

VICTOR D. BORST,
Counsel for Plaintiffs,
10 East 40th Street,
New York, New York.

STATE OF OHIO,
County of Franklin, ss.:

George M. Finkes, being duly sworn, deposes and says that he is the George M. Finkes, plaintiff herein; that he has read the foregoing bill of complaint and knows the contents thereof; that the same is true to the best of his knowledge and belief.

GEORGE M. FINKES.

Subscribed and sworn to before me this 12th day of July, 1940.

GERTRUDE M. GILLIGAN,
(Notarial Seal) *Notary Public.*

STATE OF OHIO,
County of Franklin, ss.:

L. H. Hersee, being duly sworn, deposes and says
6 that he is Secretary of The Union Fork and Hoe
Company, the plaintiff hereinbefore named; that he

has read the foregoing bill of complaint subscribed by him, and knows the contents thereof; that the same is true to the best of his knowledge and belief and that the reason why this verification is not made by the plaintiff, The Union Fork and Hoe Company, personally, is because it is a corporation.

L. H. HERSEE.

Subscribed and sworn to before me this 13th day of July, 1940.

JOHN W. RETHER,
(Notarial Seal) *Notary Public.*

7 Answer to the Complaint.

To the Honorable the Justice of the District Court of the United States for the District of Columbia.

I, II. Defendant admits the allegations of paragraphs I and II.

III. He admits that George M. Finkes, claiming to be the true, original and first inventor of a certain alleged new and useful improvement in a "Shovel", filed an application for patent thereon in the Patent Office on May 3, 1937, alleging in his said application that the said invention had not been in public use or on sale for more than two years. He denies that such allegations are sufficient to justify the issuance of a patent on said application.

IV. He admits that the alleged invention is more fully and specifically embraced in the several claims of said application.

8 V. He admits that said application was filed in the Patent Office on May 3, 1937, and given Serial No. 140,329. He admits that said application was in accordance with existing law.

VI, VII. He admits the allegations of paragraphs VI and VII.

VIII. He admits that appeal was taken to the Board of Appeals from the rejection by the examiner of claims 1 to 4, inclusive, of said application, which claims are as set out in paragraph VII. He admits that the Board of Appeals affirmed the rejection of said claims in a decision rendered on February 3, 1940. He denies that the decision of the Board of Appeals was erroneous.

IX. He admits the allegations of paragraph IX.

X. He admits that by the decision of the Board of Appeals he has refused and still refuses to issue to plaintiffs a patent containing any of claims 1 to 4, inclusive, of said application of George M. Finkes. He denies that his refusal is erroneous or that plaintiffs are entitled to receive a patent on said application containing any of said claims since it is deemed that the said claims are unpatentable in view of the following prior patents and for the reasons given in the statement of the examiner in answer to the appeal and the decision of the Board of Appeals, copies of which will be furnished at the trial:

Lowman,	142,859,	Sept. 16, 1873,
Myers,	340,602,	Apr. 27, 1886,
Surbaugh,	1,083,952,	Jan. 13, 1914,
Hassel, French,	19,349,	Aug. 26, 1912.

9 Profert of copies of these patents is hereby made.

W. W. COCHRAN,
Attorney for Defendant.

August 7, 1940.

I hereby certify that a copy of this Answer was mailed to the attorney for plaintiffs on August 7, 1940.

W. W. COCHRAN,
Attorney for Defendant.

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Findings of Fact.

1. This is a civil action brought under the provisions of Section 4915 R.S. (U.S.C., title 35, sec. 63) in which it was sought to have the Court find that the plaintiffs, George M. Finkes and The Union Fork and Hoe Company, as the applicant and assignee, respectively, of application, Serial No. 140,329, filed May 3, 1937, are entitled to the granting on said application of a patent containing claims set out

in paragraph VII of the complaint, said claims being claims 1 to 4, inclusive, of the aforesaid application.

2. The Finkes application in suit relates to a shovel of the hollow back type, stamped from a blank cut from a strip of steel that is rolled in strip form, the blank being cut longitudinally from said strip so that the grain of the metal runs longitudinally of the blank. In common with all shovels of the hollow back type, the shovel disclosed in the Finkes application comprises a blade, a tubular socket, and a hollow shank portion, the latter connecting the socket with the blade and forming a continuation of the frog portion of the blade. The strip is rolled so that it has a uniform cross section throughout its length, but is of
122 variable thickness transversely, with the maximum
thickness in the longitudinally extending central portion and tapering down laterally therefrom to the opposite edges. Consequently the shovel that is stamped from said strip is substantially reinforced throughout a central, longitudinal region comprising the frog, shank, and socket, and extending to the front edge of the blade.

3. The patent to Lowman, No. 142,859, granted September 16, 1873, discloses a shovel of the hollow back type, stamped from a blank cut from sheet metal of the required thickness. Lowman states that although he prefers to use sheet metal of one equal thickness, nevertheless the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the shovel when made will be exposed to the greatest strain. In order for this Lowman patent to have meaning, the term "sheet metal" would have to be construed as being generically used, and his reference to the rolling of "sheet metal" would include the rolling of a strip of steel of unequal thickness.

4. The patent to Myers, No. 340,602, granted April 27, 1886, discloses a strap shovel. This shovel comprises a blade and two straps by which the blade is attached to the handle. One of the straps is formed integrally with the blade from the blank shown in Fig. 1 of said patent. Myers teaches that the greatest strain on the shovel blade, and

also on the straps, is always at, along, and on the longitudinal center line of the blade and straps, and hence that the greatest thickness of metal should be at that part of the blade and straps. The Myers shovel has centrally and lengthwise of the blade and of the straps a determined thickness, which gradually diminishes toward the
123 side edges of said blade and straps, whereby the uneven wear of the shovel blade is compensated for and greater strength is obtained for the straps. In making his shovel, Myers employs a blank rolled to such shape in cross section. As a witness for the plaintiffs, Henry M. Myers, the grandson of the patentee named in patent No. 340,602, testified that to his knowledge the Henry M. Myers Company, with which he joined his grandfather in 1897, never made a shovel such as shown in this patent.

5. The patent to Surbaugh, No. 1,083,952, granted January 13, 1914, discloses in Figs. 3, 4 and 5 a shovel of the hollow back type having a thickened central portion extending throughout its length. This shovel is formed from a blank of sheet steel, rolled to provide a central rib. Surbaugh teaches that this rib adds rigidity and strength to the entire shovel blade, and also reinforces the weakest point of the blade where the frog merges with the blade, so strengthening the blade that a shovel of comparatively light character can be used in doing exceptionally heavy work. Surbaugh specifically states that: "When spades and scoops are manufactured from thin sheet metal the metal is apt to break under great stress on a transverse line which intersects the point where the frog merges with the blade. In time the metal along the above noted line will crystallize, causing the blade to break, this being particularly true where a light shovel is employed in doing heavy work." The plaintiffs offered testimony to the effect that the shovel disclosed by the said patent to Surbaugh would not be commercially feasible.

6. The French patent to Hassel, No. 19,349, granted September 2, 1914, discloses the rolling of strips from which shovel blade blanks are cut, the strips varying in thick-

ness in transverse cross section. This rolling aligns
124 the grains of the metal so that they lie longitudinally
of the shovel blanks.

7. In view of the teachings of the patent to Myers, No. 340,602, it was not invention to devise a shovel of the hollow back type consisting of a single piece of strip steel having a uniform cross section throughout its length, but of variable thickness transversely, with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges whereby the shovel is substantially reinforced throughout a central, longitudinal region comprising the frog, shank, and socket, and extending to the front edge of the blade; and in view of the teachings of the French patent to Hassel, No. 19,349, it was not invention to have the grain of the piece of strip steel run longitudinally thereof.

8. The shovel disclosed by the Finkes application here in suit has enjoyed considerable commercial success.

9. The Canadian Patent Office granted, on October 7, 1941, to George M. Finkes, assignor, a patent, No. 399,891, which is a counterpart of the Finkes application involved in this suit.

Conclusions of Law.

1. Claims 1 to 4, inclusive, of the Finkes application here in suit are anticipated by the patent to Lowman, No. 142,859, and the patent to Surbaugh, No. 1,083,952.

125 2. Said claims 1 to 4, inclusive, if not anticipated by, nevertheless are not patentable over the said patents to Lowman and Surbaugh, in view of the teachings of the patent to Myers, 340,602, and of the French patent to Hassel, No. 19,349.

3. A prior art patent anticipates the claims of a later applicant, when it discloses the subject matter of the claims notwithstanding that the device disclosed in the patent is not commercially practical and has not been exploited.

4. Commercial success is not a factor to be taken into consideration in determining patentability unless there is a doubt as to the presence of invention.

5. The granting of Canadian patent No. 399,891 has no bearing upon the right of the plaintiffs to receive a patent in the United States upon the Finkes application in suit containing the claims here in issue.

6. The complaint should be dismissed as to all the claims in suit.

MATTHEW F. McGUIRE
Justice.

126 **Final Judgment.**

This action came on to be heard at this term: and thereupon upon consideration thereof, it is, this 3rd day of February 1942, adjudged that the complaint in this case be, and the same hereby is dismissed with costs against the plaintiffs.

MATTHEW F. McGUIRE
Justice.

Approved as to form:
CHARLES J. DILLER
Attorney for Plaintiffs.

128 **Statement of Points to be Relied on by Plaintiff on Appeal.**

The plaintiffs aver that in the final judgment entered February 3, 1942, the District Court erred in the following particulars:

1. In holding that claim 3 of the Finkes application is anticipated by the patent to Lowman, No. 142,859 and the patent to Surbaugh No. 1,083,952.

2. In holding that claim 3 of the Finkes application is not patentable over the said patents to Lowman and Surbaugh in view of the teachings of the patent to Myers, No. 340,602 and of the French patent to Hassel, No. 19,349.

3. In dismissing the complaint as to claim 3.

CHARLES J. DILLER,
Attorney for plaintiffs.

VICTOR D. BORST,
Of Counsel.

* * * * * * * * * *

Patent Application as Filed.

135 The invention relates particularly to hollow back shovels and the purpose of the invention is to provide reinforcement for such shovels throughout the entire region where added strength and wearing quality are needed, without increase of cost over that involved in the production of the usual unreinforced shovels of this type.

One of the advantages of this invention is the fact that it lends itself to the fashioning of the shovel blade and handle attaching portion by stamping directly from the blank as it comes from the mill without the need of forging operations. In the present accepted mode of production strip steel rolled by the mill of proper cross-sectional shape is cut in lengths for shovel blanks and the shovel is then blanked out and shaped without further operation on the blank to alter its cross-sectional shape.

As the chief strain in a shovel occurs at the junction of the shank and the blade various means have been proposed for reinforcing the shovel in that region and the solid shank shovel has supplied one solution to this problem. That shovel however is produced from a bar of metal by forging operations and is of necessity relatively expensive.

In accordance with this invention the central longitudinal zone of the strip is thicker than the rest of the shovel and the material tapers off to minimum thickness at the edges. It has been found desirable to have this central zone of uniform thickness for a width sufficient to include the frog and shank, and since this zone extends the full length of the blank the shovel blade is reinforced through the center up to the front edge where the greatest wear occurs. There is also in any event but slight diminution in the
136 thickness of the metal to the edges of the socket section.
Thus is produced a socket type of shovel made from a single piece of metal as distinguished from a strap back shovel, having the strength of the solid shank shovel and as cheap as the usual hollow back shovel stamped from sheet metal. The socket and shank are strong and rugged, the thickness of the socket wall permitting the rivet holes

to be countersunk so that the heads of the rivets are flush.

I shall now describe the illustrated embodiment of my invention and shall thereafter point out my invention in claims.

Fig. 1 is a perspective of a section blank cut from a strip of metal as it comes from the rolling mill, with the shovel design to be cut therefrom indicated in dotted lines.

Fig. 2 is an elevation of a round pointed shovel blank cut from the section blank as shown in figure 1.

Fig. 3 is a central longitudinal sectional elevation of a finished shovel made from the blank of figure 2.

Fig. 4 is a back elevation of the shovel of figure 3.

Fig. 5 is a sectional plan of the shovel on line 5—5 of figure 4.

Fig. 6 is a section of the shovel on line 6—6 of figure 4.

Fig. 7 is a front elevation of the shovel.

Fig. 8 is a view similar to figure 2 of another type of shovel blank which may be cut from a section blank 1.

The type of strip shown in figure 1 has proven to be eminently satisfactory as well as economical. It is rolled in strip form by the mill in lengths of several feet suitable to be cut in a predetermined number of individual lengths
as shown in this figure. From this section blank 1
137 the shovel blank 2 of figure 2 is cut. For the pur-
pose of illustration a blank for a round pointed shovel is shown and the shovel made therefrom will be described, although it will be understood that a square straight edged shovel blank as indicated in figure 8 or other desired shape may be employed.

The strip and hence the section blank 1 are of the maximum width of the shovel blank so that the shovel may be blanked therefrom with minimum waste of material. A suitable commercial width is 10 inches. The strip is of variable thickness, being greatest at its center. In the form shown it is flat on one side and the other side tapers oppositely from a maximum thickness at the center to a minimum thickness at the edges. A central longitudinal zone or region between the lines *a* and *b*, say about 2 inches wide, is of uniform thickness, say about 86 thousandths of an inch, and the thickness then tapers down uniformly to a minimum at the edges where the thickness is, say, 54 thousandths of an inch.

The shovel blank 2 is cut longitudinally from this section blank 1 so that the greatest thickness is in a zone running lengthwise through the middle from end to end. The shovel blank includes the blade section 3 and an outwardly flaring axial extension from the rear end comprising a socket and shank section 4. The rivet holes 5 are drilled in this section before shaping the blank, and it will be noted that these are countersunk, an expedient not possible with sheet metal.

The shovel blank 2 may be shaped by the usual stamping dies into the final form as shown in figures 3 to 7. The blade 6 is given the desired concavity with the hollow frog portion 7 merging into the shank portion 8 and the socket
9 as usual. The extension 4 is rolled into closed
138 tubular shape to form the socket to receive the handle 10, and the edges so folded around are continued to form the hollow shank and the reverse fold 11 at the top edge of the blade as shown and as is customary with shovels of this type.

The handle 10 is secured in the socket by the through rivets 12 the heads of which are countersunk and are virtually invisible in the finished article. The flare of the extension 4 provides the usual taper to the socket and shank portion, to correspond to the usual tapered end of the handle received therein.

The thicker central zone thus runs from end to end of the shovel and reinforces the entire socket and shank section and the frog where breakage is most likely to occur, and also provides the extra metal at the front end where, especially in a pointed shovel, it customarily wears away.

139 I claim:

1. A shovel of the hollow back type consisting of a single piece of strip metal having a uniform cross section

throughout its length but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges, and comprising a blade and a tubular socket and a hollow shank portion connecting the socket with the blade and forming a continuation of the frog portion of the blade, whereby the shovel is uniformly reinforced throughout a central longitudinal region comprising the frog, shank and socket and extending to the front edge of the blade.

2. A hollow back shovel of the type described consisting of a single piece of strip steel including a blade section and a tapering, tubular shank and socket section of circular configuration in cross section, the strip steel having a central, longitudinal portion of sufficient width to include the frog and the line of junction between the blade and shank, and of substantially uniform thickness greater than that of the portions on each side thereof, the said central portion extending the entire length of the strip steel whereby the blade section of the shovel includes a reinforced, longitudinal central portion of greater thickness than the side portions and the frog and the shank and socket section are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade.

3. A shovel of the hollow back type consisting of a single piece of strip steel including a blade section and a tubular shank and socket of circular cross section, the strip steel having a central longitudinal portion of a width substantially one-fifth that of the back edge of the blade and of uniform thickness and tapering down laterally therefrom to the opposite edges, the said central portion extending the entire length of the shovel whereby the blade section has a reinforced longitudinal central portion including the frog of greater thickness than the side portions and the shank and socket are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade.

* * * * * * * * * *

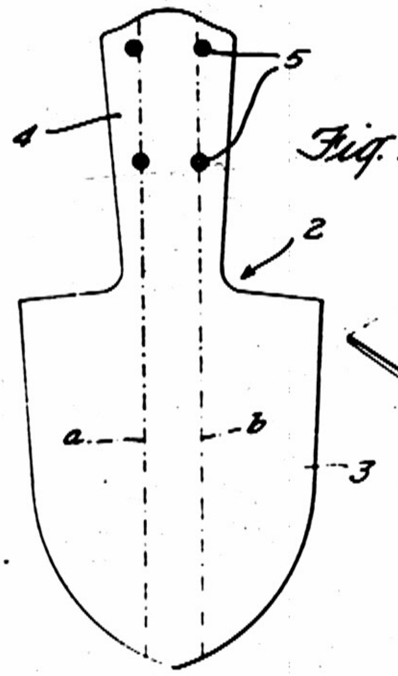


Fig. 1.

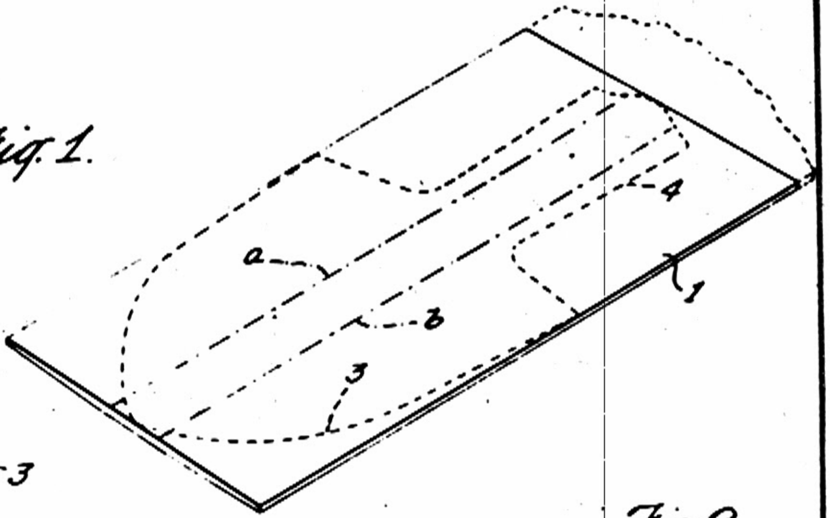


Fig. 2.

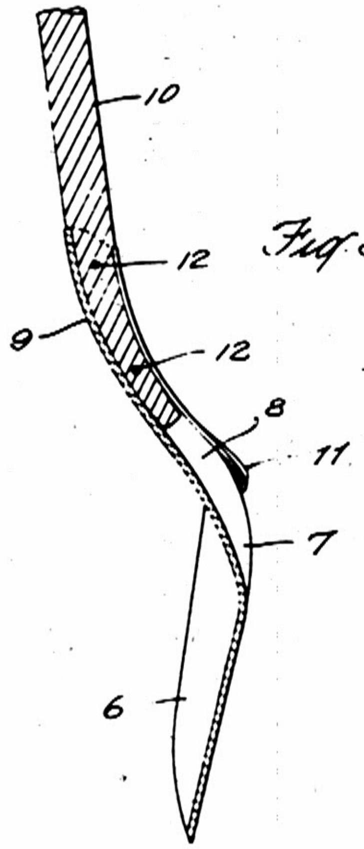


Fig. 3.

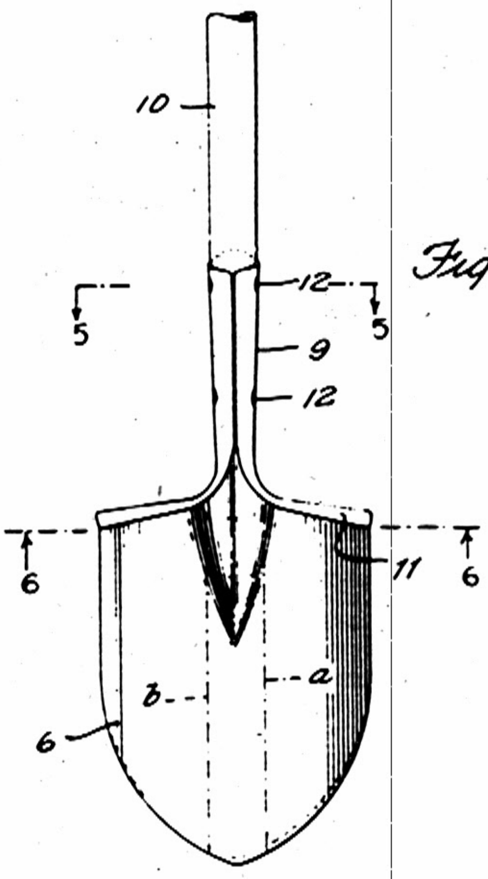


Fig. 4.

INVENTOR
GEORGE M. FINKES
BY
Victor D. Bond
ATTORNEY

Print of drawing as originally filed

Fig. 5.

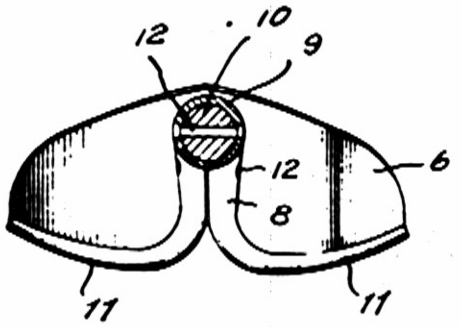


Fig. 6.

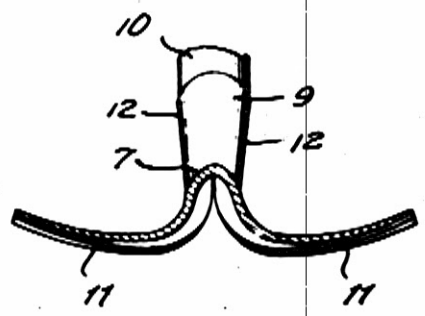


Fig. 7.

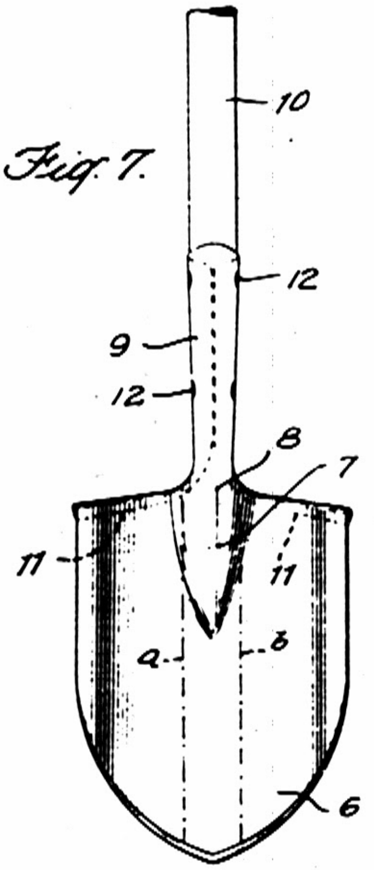
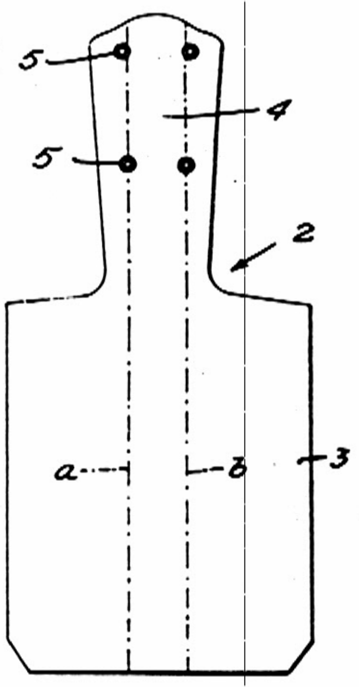


Fig. 8.



INVENTOR
GEORGE M. FINKES

BY
Victor D. Borst
ATTORNEY

145 Endorsed: Mail Division Jan 29 1938 U. S. Patent Office

U. S. Patent Office Jan 31 1938 Div. 4 Paper No. 4

Amendment A.

In the United States Patent Office

In re application of
George M. Finkes,
Serial No. 140,329,
Filed May 3, 1937,
Shovel,
Div. 4, Room 7083.

New York, N. Y., January 28, 1938.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

In response to the Official Letter of August 3, 1937:

Will the Examiner kindly reverse the numerical appellations of Figs. 1 and 2, changing Fig. 1 to Fig. 2, and changing Fig. 2 to Fig. 1, as indicated in red ink in the accompanying photostat.

Cancel the first sentence on page 2.

Page 4, line 20, after "that" insert —the grain of the metal runs longitudinally of the blank and—.

Claim 1, line 9, change "uniformly" to —substantially—.

Add the following claim:

4. A shovel of the hollow back type consisting of a single piece of strip metal with the grain running longitudinally thereof and having a uniform cross section throughout its length but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges, and comprising a blade and a tubular socket

and a hollow shank portion connecting the socket with the blade and forming a continuation of the frog portion of the blade, whereby the shovel is substantially reinforced
throughout a central longitudinal region compris-
146 ing the frog, shank and socket and extending to the
front edge of the blade.

Argument.

For reasons now to be discussed reconsideration of the rejection of claims 1 to 3 and the allowance of claim 4 are respectfully urged.

A shovel like that shown and claimed has never been marketed, at least in this country, before applicant's assignee brought it out. Many others, including Myers who was a practical shovel manufacturer, have made attempts or at least have had visions of something of the sort. Applicant's shovel as disclosed is commercial and is being widely acclaimed as the most revolutionary thing in shovels since Skelton brought out his solid shank shovel. All of this will be established by affidavits if the Examiner so wishes.

Tests have proven that applicant's shovels last at least half again as long as the ordinary scoops and shovels. Being so meritorious why have they not been produced before if they are fully taught in the prior art? The natural conclusion is that something was wanting in the teaching of the prior art, and we shall see that that is a fact. The mere suggestion of an article in a vague way when there is no way available to produce it is nothing more than "a pious aspiration". Others than Myers had such aspiration but none attained it. Lowman in his patent 142,859 more than sixty years ago had such a dream. To him is credited the hollow back shovel. He was the first one to teach how to stamp such a shovel out of sheet metal. But his vision went farther and he said in his patent: "* * * it will be obvious that the sheet metal for the blanks may be rolled
of unequal thickness, making it thickest in the parts
147 which in the article, when made, will be exposed to
the greatest strain."

Milligan in his patent 1,898,590 also aimed at something of the sort. He is very well known as a shovel manufacturer but his shovel has never seen the light of commercial day.

These facts are significant and serve to emphasize the importance of applicant's contribution.

It is of course fundamental that in order to anticipate a prior patent one must clearly and completely disclose the article claimed. Trussell Mfg. Co. v. Wilson-Jones Co., 50 Fed. (2nd) 1027, 1029. It is not permissible to modify the structure disclosed and then claim the modified structure as an anticipation.

> *Eames* v. *Andrews,* 122 U. S. 40, 66.

Nor is it permissible to put together the disclosures of several different patents.

> *Imhaeuser* v. *Buerk,* 101 U. S. 647, 660.

A mere suggestion in a prior patent, a hint, a statement of a desideratum are not sufficient to anticipate.

"Nor can we think that the existence in the Patent Office of something which might merely supply a hint, but was not specifically described or claimed as intended to be covered by a patent, ought to be held as an anticipation of an otherwise valid invention. Inventors are not precluded by the embryonic and shapeless ideas found in former patents, any more than they are by such undeveloped matter existing elsewhere."

> *Canda* v. *Michigan Malleable Iron Co.,* 124 Fed. 486, 492.

A description of an article without any way being described or known for making it will not negative novelty in a later patent for the article which does teach how to make it.

"And a claim for an article of manufacture may be anticipated by a prior patent or printed publication, which describes the article, without describing any process of making it; provided a knowledge of the article would teach a skillful mechanic some process of making it." Walker on Patents, Sixth Edition, Sec. 96.

148 In *Cohn* v. *U. S. Corset Co.*, 93 U. S. 366, Mr. Justice Strong, speaking for the Court, said, page 370: "It must be admitted that, unless the earlier printed and published description does exhibit the later patented invention in such a full and intelligible manner as to enable persons skilled in the art to which the invention is related to comprehend it without assistance from the patent, or to make it, or repeat the process claimed, it is insufficient to invalidate the patent."

See also

In re Schaeffer, 2 App. D. C. 8.
One-Piece Bifocal Lens Co. v. *Bisight Co.*, 246 Fed. 450, 462, Affd. 259 Fed. 275.

In this latter case the Debenham British patent admittedly showed the one-piece bifocal lens claimed in the Conner patent in suit. In fact the drawings in the two patents might have been transposed. The way mentioned by Debenham for making the lens was not deemed practical. Hence Judge Rose found that the patent was not an anticipation. It did not, he said, disclose the lens.

The Myers patent No. 340,602 is a very old patent. It goes back to 1886. As above stated, the patentee was a practical shovel maker. Yet he never made the shovel of this patent. And for the obvious reason that it was neither practical nor possible. He proposed to make it out of "any of the known forms of blanks." There were just two forms known, one was sheet metal and the other bar metal. To plate or roll it a bar was required. It contemplated a forging operation. But how was he to get the two straps out of the blank? He does not tell us. Certainly there is no obvious way to do it. His patent falls short of a sufficient disclosure even of the shovel shown.

As compared with this applicant claims a *hollow back* shovel comprising a blade and *tubular socket* and a
149 hollow shank portion and reinforced throughout the region comprising the frog, shank and socket. The

most that can be said is that a section through applicant's blade is like the picture of such a section in the Myers patent.

Of course the Surbaugh patent 1,083,952 shows a socket shovel. So does Lowman. The rib of the Surbaugh patent makes the shovel of that patent utterly impractical. No one ever saw such a shovel and for the very good reason that it would be useless. The patent represents nothing more than another pious aspiration.

The new claim 4 brings in the grain of the metal. When shovels are made from bar steel the blanks are cut out transversely of the rolled bar of metal. This is illustrated clearly in figure 4 of the Milligan patent. It is for economy of metal and labor. The Myers patent therefore purports to disclose a shovel which is cross grained. Applicant's shovel blank is cut out longitudinally of the strip. The claims all so recite. The shovel is described as composed of a single piece of *strip* metal. The difference between strip steel and sheet steel and bar steel is of course elemental in the steel industry. Surbaugh says that his is made out of *sheet* metal. The Myers patent teaches bar steel blanks.

To be commercial and compete with the ordinary hollow back shovels, a reinforced shovel cannot be made individually as proposed by Myers and by Milligan. It must be stamped out of material rolled in the finished cross sectional contour, even as suggested by Lowman way back in 1873. But that hint was not enough. Milligan, the practical shovel man, in 1931 was proposing to forge each one out of a plate. No two would be alike. And he was going to reinforce the frog region only.

A survey of the whole situation seems to leave little doubt
that it remained for applicant to take the last step
150 which marks the difference between failure and success. He is entitled to the reward of a patent.

Cimiotti v. *American,* 198 U. S. 399.
Potts v. *Creager,* 155 U. S. 597.
Clough v. *Barker,* 106 U. S. 166.

It is believed that the claims distinguish patentably from the art and should be allowed. Such action is solicited.

Very respectfully,

VICTOR D. BORST,
Attorney for Applicant.

VDB/P

* * * * * * * * * *

159 Div. 4 Room 7083 HAK:FM Paper No. 7

Department of Commerce
United States Patent Office
Washington

April 14, 1938

Applicant: G. M. Finkes
Ser. No. 140,329
Filed May 3, 1937
For Shovel

V. D. Borst,
10 E. 40th St.,
New York, New York.

Responsive to amendment filed January 29, 1938.
References added:
Lowman 142,859 Sep. 16, 1873 294-49 ux
French Addition patent
19,349 Sep. 2, 1914 76-113
3 pgs. spec.—1 sht. drwg.
(to original patent 447,633)

Applicant's device is made up entirely of elements and features known to be old in the art of shovels. The Surbaugh patent, of record, particularly in Fig. 5 shows it to be old to form a hollow-back shovel with a substantial reinforced portion throughout its central longitudinal region at 12. The Myers patent teaches it to be old to form a shovel blade gradually reduced in thickness from its center longitudinal area to its side edges. Therefore, to form the central reinforced portion 12 shown in the Surbaugh patent so that it would gradually taper towards the edges instead of the abrupt taper shown, would not involve invention over what is shown in the Myers patent.

The Lowman patent is cited to show that the use of a hollow-back shovel is old in the art. The French patent is cited to show that it is old to roll metal to form shovel blades with ridges acting as reinforced portions along their longitudinal centers. Therefore, it would not be invention to roll a shovel blade of the cross section shown by applicant or the Myers patent.

160 The affidavits filed in this case have been carefully considered, but even admitting that the structures shown in the references have not been of any commercial success it is clear that they show the way to make a shovel as defined in applicant's claims, without invention.

Claims 1 to 3 are again rejected as unpatentable over the Surbaugh and Myers patents.

Claim 4 is also rejected as unpatentable over Surbaugh and Myers for the reasons of record. The limitation that the grain runs longitudinally is deemed immaterial and is as obvious to one working in metal as the act of having the grain running lengthwise in a wooden handle.

A. E. DONNELLY
Examiner.

182 Endorsed: Mail Division Oct 13 1938 U. S. Patent Office

Endorsed: U. S. Patent Office Oct 15 1938 Div. 4 Paper No. 11.

Amendment B.

In The United States Patent Office

In re application of
George M. Finkes,
Serial No. 140,329,
Filed May 3, 1937,
For SHOVEL,
Div. 4, Room 7083.

New York, N. Y., October 12, 1938.

Honorable Commissioner of Patents,
Washington, D. C.

Sir:

Responsive to official letter of April 14, 1938, please amend as follows:

Claims 1 and 4, line 2 of each claim, change "metal" to —steel—.

Argument

Applicant asks for a reconsideration of the rejection of the four claims.

Reference is made to the eight affidavits which have been filed since the receipt of the last official action. It is not deemed necessary or advisable to multiply such affidavits further, nor to file copies of all the multitudinous unsolicited testimonials which the manufacturer is constantly receiving. As a specimen of the latter there is attached a photostatic copy of a recently received testimonial from the Indiana State Farm.

This shovel has revolutionized the industry. That is a strong statement. The facts bear it out. The history of the industry shows that there has been a striving
183 for a stronger and more durable shovel than the

standard hollow back shovel. Skelton resorted to a solid shank shovel to get the strength. He went away from the hollow back. His shovel is forged. Necessarily it is expensive. But his shovel does not have the wearing qualities for it is just as thin at the point as it is at the edges. Even before Skelton Myers had taken out his patent on a forged shovel that was to have the reinforced central longitudinal zone and thus increase the wearing qualities. But, like Skelton, he departed from the hollow back which Lowman 13 years before had taught how to stamp out of sheet metal. So his shovel was expensive and in fact never was produced. It purported to be a strap shovel. But the patent would have both straps of the same thickness as the central longitudinal zone of the blade. How he would attain this he does not say and it certainly is not obvious how it could be done out of one blank. Milligan later presented another way of making a reinforced shovel blade but his again was a forged job and expensive and he proposed to strengthen the article merely around the frog, for his was a hollow back shovel. The fact that it has never been commercialized is sufficient evidence of its impracticability. To round out the picture we have the Surbaugh patent. Surbaugh alone of all the prior patentees proposed to reinforce longitudinally a hollow back shovel stamped out of sheet metal. But his is impractical on its face and of course did not emerge from the theoretical stage. Even if it could be produced it would be of no use. It would be a freak, nothing more.

Applicant took the last step necessary to give to the public the shovel that all these prior patentees had been aiming for but not attaining. He recognized that to be com-
184 mercially practical it had to be priced to compete
with the standard hollow back shovel. Forging was therefore out of the question. It must be stamped. He it was who thought of using the product of the modern Strip mill and thus was found a uniform, practical and reasonably priced material for the desired shovel. Such a mill by reason of the massive size of the rolls employed can make a strip of

the section desired always uniform, and by reason of its almost automatic operation can produce the strip steel at a reasonable price. By employing this strip steel applicant is able to produce a shovel reinforced in the particulars stated at a price competitive with that of the standard hollow back shovel of uniform thickness stamped from sheet metal.

Naturally therefore the acceptance by the public of such a shovel has been instantaneous and voluminous. Applicant recognizes of course that commercial success cannot create an invention, but this is believed to be preeminently a case where doubts should be resolved in favor of the grant of a patent. As will be further pointed out each of the four claims distinguishes from every reference. They distinguish in the respects which are responsible for applicant's shovel becoming the tremendous commercial success that it is, while the prior patented constructions have not seen the light of commercial day.

First with respect to the two new references:

Lowman is said to be cited to show that the use of a hollow back shovel is old in the art. This is conceded. Applicant calls attention to the vague reference in the first complete paragraph on page 2 of this patent. This statement
185 represents nothing more than "a pious aspiration". Attention is again called to page 3 of applicant's previous argument that "a mere suggestion in a prior patent, a hint, a statement of a desideratum are not sufficient to anticipate", citing *Canda* v. *Michigan Malleable Iron Co.*, 124 Fed. 486, 492.

The disclosure of the French Addition patent 19349 is not clearly comprehensible. It is fundamental that a foreign patent cannot be aided by presumption or implication. *In re Liddel* (C.C.P.A.) 69 Fed. (2nd) 370; *Hall* v. *Stahl*, 65 Fed. (2nd) 594, 20 C.C.P.A. 1192 and cases cited. This patent is said to be cited to show that it is old to roll metal to form shovel blades with ridges acting as reinforced portions along their longitudinal centers. Applicant is not claiming the method. It is believed that this French patent of addition falls far short of disclosing the article claimed by applicant.

The Examiner combines the Myers patent and the Surbaugh patent. Individually of course they fail to meet the claims. The joinder of the two patents, even if proper, still fails as an anticipation.

No way is taught of making the Myers shovel. It is proposed to be forged out of bar metal. The grain inevitably would run crosswise. The two straps B cannot be made of the thickness of the center zone from such a blank. This patent did not go far enough to advance the art. Nothing ever came of it (see the affidavits).

That patent of 1886 cannot now be supplemented by a Surbaugh patent of 1914. Myers has been and shall remain in oblivion. It is submitted that the patents will have to be considered each on its own merits. Therefore there is no warrant for considering the Surbaugh patents as
186 though the construction were modified to meet what
applicant discloses and claims. The Surbaugh rib is obviously impractical.

The following chart brings out graphically the respects in which each claim differentiates from the several references:

Claim	Myers	Lowman	Surbaugh	French patent
1	(a) hollow back (b) strip steel	(a) variable thickness (b) strip steel	(a) tapering (b) strip steel	extending to front edge of blade
2	(a) hollow back (b) strip steel (c) tapering tubular shank and socket section	(a) tapering tubular shank and socket section (b) central portion of sufficient width etc. (c) strip-steel	(a) tapering tubular shank and socket section (b) central portion of sufficient width etc. (c) strip steel	(a) tapering tubular shank and socket section (b) Central portion extending the entire length of the strip steel
3	(a) hollow back (b) strip steel. (c) tubular shank and socket (d) central longitudinal portion of a width substantially one-fifth—and tapering etc.	(a) a central longitudinal portion of a width substantially one-fifth—and tapering etc. (b) strip steel	(a) a central longitudinal portion of a width substantially one-fifth—and tapering etc. (b) strip steel	extending the entire length of the shovel
4	(a) hollow back (b) strip steel (c) grain running longitudinally (d) tubular socket and hollow shank	(a) variable thickness transversely etc. (b) strip steel	(a) tapering down laterally therefrom (b) strip steel	(a) grain running longitudinally (b) uniform cross section throughout its length

The significance of strip steel as a limitation in the claims
must not be overlooked or underestimated. It is the strip
steel that makes this shovel possible. Strip steel is of
course a separate classification in a rolling mill. It is the
strip steel which makes it possible to stamp the shovel blade
with the tapering cross section from the stock as it is
187 obtained from the mill. It only has to be cut into
individual lengths. The grain runs lengthwise in the
strip and hence runs the same way in the shovel.

Thus it clearly appears that each claim distinguishes from each reference. As stated in applicant's previous argument, it is not permissible to put together the disclosures of several different patents. *Eames* v. *Andrews*, 122 U. S. 40, 66. But an inspection of the above chart shows that no combination of any of the four references would form a composite anticipation.

Now that applicant has done it, it may seem simple and obvious. The results argue otherwise. What would constitute invention is of course in the last analysis a matter of opinion. There are indicia, however, that the courts have laid down as guides to a decision, and these are enumerated in *Kurtz* v. *Belle Hat Lining Co.*, 280 Fed. 277 (C.C.A. 2). An examination of that case and a consideration of the facts here established by the several affidavits filed can leave little doubt that applicant has satisfied the requisites of invention. It is believed that the claims should be allowed.

Very respectfully,

VICTOR D. BORST,
Attorney for Applicant.

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188 INDIANA STATE FARM

Floyd J. Hemmer, Supt. Greencastle, Indiana.

Sept. 21, 1938
Received Sep 23 1938

Union Fork & Hoe Co.
500 Dublin Avenue
Columbus, Ohio

Gentlemen:

We purchased from the Schafer Company, Decatur, Indiana, twelve dozens of your "razor back" dirt shovels. As I remember, purchase of these were made in March.

These shovels were put into service on May 5th, of this year, being used in our stone quarry by inmate labor and at the present time, they are all in service except two. These two are in perfectly good condition, other than the men leaving them to close to the ledge and rock falling on them during the blasting period have broken the handles out of them.

The average life of a shovel in our stone quarry is thirty days, so you can see that we are more than pleased with the service that we are receiving from your "razor back" shovels, since out of the full twelve dozen, we only have two shovels out of service after four months of continuous work. This is a record that your company can be proud of.

I shall not hesitate, in the future, when making purchases to recommend to our purchasing department the purchase of your "razor back" shovels.

Yours very truly,

CLAUDE S. SILKWOOD

Claude S. Silkwood
Supt. Industries

CSS:JCD

189 Endorsed: Mail Division May 28 1938 U. S. Patent Office

Div. 4 Room 7085 HAK:FM Paper No. 12

DEPARTMENT OF COMMERCE

United States Patent Office

Washington

November 28, 1938

Please find below a communication from the EXAMINER in charge of this application.

Conway P. Coe
Commissioner of Patents.

Applicant: G. M. Finkes
Ser. No. 140,329
Filed May 3, 1937
For Shovel

V. D. Borst,
10 E. 40th Street,
New York, New York.

Responsive to amendment filed October 13, 1938.

Applicant's arguments and affidavits have been carefully considered and it is conceded applicant's shovel is of superior quality in every way. Applicant argues that his claims and shovel are patentably different from the shovels shown in the references. In regard to the Myers patent it is stated that Myers' forged shovel could not be made at a reasonable price and no way of making it is told in the patent, but this fact is immaterial, because it *does show* a shovel blade of varying thickness in the same proportion as applicant's shovel blade and such a blade could be made. The Surbaugh patent also shows a shovel with a thicker center portion to resist wear and a hollow back frog for the handle. This patent anticipates applicant's idea which is admitted by applicant as being the theory on which applicant's shovel is based to make it practical. Applicant, also in his argument, states that in case of doubts as to patentability that such should be resolved in his favor. This is true, especially in the case where an applicant's device has been so much of a commercial success, but here there is no doubt as to patentability because of the teachings of the Surbaugh patent and Myers patent.

The Lowman patent as well as the Surbaugh patent shows stamped out hollow back shovels are old. Particular attention is again called to the fact that the Lowman
patent also discusses the idea of a variable thickness
190 shovel blade, as being old at that time. The rolling
process shown in the French patent to make strip
steel necessarily aligns the grains so as to be longitudinal of the shovel blanks, particularly of the cross-section shown in Figs. 18, 19 and 20.

The devices shown in these references are possible of utilization and could be reproduced by anyone skilled in the art with the present factory methods and, therefore, are valid anticipations for what they show.

The particular features that applicant points out in his claims that are not shown by the references are not features which are of patentable distinction and in most instances only amount to changes in design.

Applicant's device therefore appears to be made up entirely of elements and features old in the art of shovels and claims 1-4 are finally rejected as unpatentable over the references of record.

A. E. DONNELLY
Examiner.

U. S. Patent Office
May 27 1939

Div. 4 Paper No. 13

191 Endorsed: Mail Division May 25 1939 U. S. Patent Office

Endorsed: Board of Appeals May 26 1939 U. S. Patent Office.

IN THE UNITED STATES PATENT OFFICE

In re application of

GEORGE M. FINKES,

Serial No. 140,329,
Filed May 3, 1937,
SHOVEL,

Div. 4, Room 7085.

New York, N. Y., May 24, 1939.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

I hereby appeal to the Board of Appeals from the decision of the Primary Examiner, dated November 28, 1938, finally rejecting claims 1, 2, 3 and 4 (all of the claims) of the above entitled application. The reasons assigned for appeal are as follows:

1. The Primary Examiner erred in holding that the Myers patent No. 340,602 anticipated the construction claimed, in spite of the fact that it relates to a different type of shovel (strap shovel instead of hollow back as

claimed) and fails to tell how a strap shovel of the characteristics described can be made from the blank shown.

2. The Primary Examiner erred in combining the Surbaugh patent No. 1,083,952 with the Myers patent and in holding that the claims are anticipated by such combination, in spite of the fact that a hollow back shovel having the characteristics claimed by applicant cannot be obtained by any possible selection and combination of features from the two patented shovels, even if it were permissible to make such arbitrary selection and combination.

3. The Primary Examiner erred in combining the Lowman patent No. 155,532 with the Myers patent and in holding that the claims are anticipated by such combination, and in giving anticipative significance to the vague 192 statement in the Lowman patent that "it will be obvious that the sheet metal for the blank may be rolled of unequal thickness, giving greater thickness to the parts which will be exposed to the greatest strain when in use."

4. The Primary Examiner erred in holding that the claims are anticipated by the French Patent of Addition No. 19,349 and in giving this foreign patent the benefit of presumptions and implications to apply it to features claimed.

5. The Primary Examiner erred in holding that the devices of the references are possible of utilization and could be reproduced by anyone skilled in the art.

6. The Primary Examiner erred in holding that the claimed features not shown in the references are not features of patentable distinction.

7. The Primary Examiner erred in holding that applicant's device appears to be made up entirely of elements and features old in the art of shovels.

8. The Primary Examiner erred in holding that there is no doubt as to patentability because of the teachings of the Surbaugh patent and Myers patent.

9. The Primary Examiner erred in that he held that applicant's device which admittedly was a great commer-

cial success was not patentable over the disclosures of the references.

10. The Primary Examiner erred in rejecting claims 1, 2, 3 and 4.

11. The Primary Examiner erred in not allowing claims 1, 2, 3 and 4.

The appeal fee of $15.00 is enclosed herewith and
193 an oral hearing is requested.

Respectfully,

GEORGE M. FINKES
By Victor D. Borst
Attorney.

VDB:MC

TESTIMONY AND PROCEEDINGS DESIGNATED BY APPELLANTS.

12 Washington, D. C.
October 30, 1941.

The above-entitled cause came on for hearing before Associate Justice McGuire at 10 o'clock a. m.

Appearances:

On behalf of the plaintiffs:
Victor D. Borst, Esq., and Charles J. Diller, Esq.
On behalf of the defendant:
Clarence W. Moore, Esq.

Proceedings

The Assistant Clerk: The case of Finkes et al. v. Coe.

Mr. Borst: Ready, your Honor.

13 Mr. Moore: Ready.

Opening Statement on Behalf of the Plaintiffs
by
Mr. Victor D. Borst

Mr. Borst: I am Mr. Borst, from New York, your Honor. Your Honor understands, I think, that this is a 4915 case. The subject matter is a shovel. The applicant Finkes assigned to The Union Fork and Hoe Company, of Columbus, Ohio, and those two are the plaintiffs in the case.

The general jurisdictional matters are admitted in the answer, and that brings us squarely down to the question of whether or not what Mr. Finkes described and sought the patent on does represent invention over that which was previously known, or at least was published, in prior patents.

The Examiner rejected finally the four claims that we are seeking to get patented. Appeal was taken to the Board of Appeals in the customary way, and the Board of Appeals affirmed the Examiner, ruling that in view of the disclosure shown in prior patents, the construction of Mr. Finkes' did not involve invention. That is the issue which is before your Honor.

Mr. Moore has handed up the patents on which the defendant relies. Those were cited in the answer, being the same ones that were cited against the patent application in the Patent Office.

I have here a certified copy of the file wrapper and contents of the application in the Patent Office, which I
14 will make Exhibit 1.

(File wrapper and contents were marked Plaintiffs' Exhibit 1 and were received in evidence.)

Mr. Moore: If it is agreeable to Mr. Borst, I will offer a copy of the patents and Examiner's statement as Defendant's Exhibit 1, out of order.

(File wrapper containing—
A—Lowman, 142,859;
B—Myers, 340,602;
C—Surbaugh, 1,083,952;
D—Hassel, French, 19,349;
E—Print of Drawings;
F—Statement of the Primary Examiner, and
G—Decision of the Board of Appeals,
was marked Defendants' Exhibit 1 and was received in evidence.)

Mr. Borst: Your Honor, in order that you may fully understand the matter on which we are seeking a patent, I shall go a little into the description of various types of shovels. This particular construction must be properly related in the art to get a complete and accurate understanding of its merits. We have a type of shovel that is known as the hollow-back shovel.

Your Honor should understand what is meant by a hollow-back shovel. A hollow-back shovel is a very, very old type of shovel, and there are several examples of it here. Taking this one at random (indicating), your Honor

will see—of course, the shape of the operating end may
be straight across or it may be pointed; that is immaterial;
we are concerned with the way that the handle is attached
to the blade—that the shovel has an integral socket
15 member, and in order to have this merge properly
into the blade there is a concavity formed near the
back edge of the shovel, which is known as the frog. That
doubtless came from the frog of a horse's hoof. It is similar
to that, and so it is always known in the trade as the
frog. You will see that that, then, just naturally merges
into this extension which is shaped into the form of a hollow
socket, and receives the handle. Now, that is the type of
shovel with which this application is concerned.

As compared to that, I want your Honor to observe this shovel (indicating), which is known as a strap shovel. You will observe that this shovel does not have that problem of merging an integral shank and socket with the blade, but instead this type of shovel is made in three parts, the blade terminating at the back edge and then two strap members which are welded onto the blade and then are shaped partially to surround and to be riveted to the handle which is inserted between them.

That strap shovel is a very distinctive and well known type of shovel, and those two shovels may be said to be the most generally known and the oldest types of shovels. There are certain merits in each, but they are entirely distinct in the trade.

Your Honor can see that, from a construction, from a
manufacturing, standpoint there are distinct advantages in
the hollow-back type, because they are stamped out.
16 We shall have placed in the record the original
patent on a hollow-back shovel, going away back to
1873, and it describes the process, the way of making the
shovel, that has always been followed—that is to say, to
cut out from sheet material a blank, including an extension
on the rear, and that extension on the rear is shaped as
the whole thing is placed in a die and shaped to form a
socket.

There are, to which I shall presently refer, inherent weaknesses in the hollow back shovel. In spite of the fact that it lends itself so conveniently to manufacturing methods, there are inherent weaknesses in it. Those weaknesses are avoided in this strap type of shovel. There is not the frog present in this. There is a welding of the additional strap parts to it, and the only weakness which would be inherent in this would be in the weld itself. We shall learn that that was oftentimes a defect in the strap shovel—that the welded straps would come loose; the weld would not last; it would not stand up. Now, those are the two principal types of shovels.

I spoke, your Honor, of inherent weaknesses in these shovels. This (indicating) is an old war horse. Your Honor can see, it is a hollow-back shovel, and was selected and brought here as typical of what happens to hollow-back shovels in use. Your Honor can see, first of all, that the point is worn off from use. That has reached a stage where
it would become pretty nearly useless. That will
17 continue to wear concave, and with a little more con-
cavity it would not be usable at all. In addition to that, I want your Honor to notice a break right at the end of the frog, where the frog joins the blade, and then a lateral break in the frog on the side. Those are indicative of the weaknesses that are inherent in a hollow-back shovel.

That was well recognized in the trade, and there was a type of shovel that came into existence many years ago known as the Skelton or solid shank shovel. That shovel was brought out to remedy the defects really in the hollow-back type of shovel, and I have one of those here. This (indicating) is a shovel made by forging. It is not stamped out from sheet metal, but is made from a bar of metal. That is originally in T-shape, a short stem to the T, a long broad head, and then by heating and forging we have produced this shovel with the attachment between the socket and the blade a solid bar of metal, and it is made more sturdy in the parts around the shank, and was therefore known as the solid-shank shovel. That is where it got its name from. This shovel is much more durable than the ordinary hollow-back shovel, and obviously costs a great deal more. They are custom made shovels; each one is made individually from its own blank. Therefore, that solid-shank shovel must be kept in mind.

We shall find, your Honor, that patent art did in
18 a way prognosticate what was eventually produced.

We will assume so; otherwise there would not be the rejection and we would not be here in this court. It is the contention of the plaintiffs in the case that nothing of value came from the suggestions in the prior art, and that it remained for this particular applicant really to bring to fruition that which had been only speculations and hopes in the art before.

You will want to know, your Honor, just what it is that we are seeking a patent for. Stated briefly, it is the provision in a hollow-back shovel of a thickened center, running from end to end, which provides the strength and the added wearing power right down through the backbone of the shovel, and therefore gives it added life.

Before I turn to how that is produced, I would like your Honor to see this. This (indicating) is a shovel of the Union Fork and Hoe made under the application, the invention here, taken out of stock. It is known as the Razor-Back Shovel. That, of course, has never been used.

Here (indicating) is a Razor-Back Shovel, one of the very first shovels that was made. It has been out three or four years. It was taken from a warehouse of a contractor and has been in use for at least two years. No other hollow-back shovel ever made would look like that. It still has its shape. While it has shortened up—measurements show that it has shortened about a half inch in use—you will see that
19 it still has its original shape. In other words, it does
not wear concave at the point. There is no indication of any breaks or tendency to break around the so-called frog of the shovel.

I have a blank, and this will illustrate to your Honor how the shovel is made. As you will see from the drawing of the application, it is made from so-called strip steel. Now, strip steel is a type of steel product from the rolling mills, with which your Honor may well be familiar. It is distinguished from sheet steel. Sheet metal is made from laterally lengthening and also longitudinally elongating the metal from a bar or strip of metal; whereas the strip steel is made by rolling only in one direction. It is 24 inches or less in width, in order to be made that way. We shall have an expert on the stand to explain these things to your Honor.

This strip is made 10 inches wide. That is the width of the final shovel. It is rolled in such a way as to provide this thickened center. There is much more in that than appears on the surface. At the center the thickness is stated in the application to be, and is in fact in use, .086 of an inch, with a tolerance of .003 plus or minus. That thickness is continued for a width of 2 inches, right down backwards, and has that uniform thickness. That takes in the part that needs most to be reinforced and strengthened. Then from there it tapers down uniformly to the edges to a thickness of .054, with a tolerance of .003 plus or minus.

The Court: Are you talking about its going down to the blade or the shank?

Mr. Borst: I am talking now about the lateral edges. This backbone, so-called, of 2 inches width, right down the center, from end to end, has this maximum thickness of .086, and then from that—the opposite edges of that 2-inch strip—it tapers uniformly right down to the lateral edge, where it has the minimum thickness of .054.

That is the characteristic of the strip from which the shovel blank is cut, and I have in my hand the blank as it is cut from that strip. You see, the blanking operation is precisely the same as it is in the old sheet metal hollow-back shovels, and the method of making it is in all substantial respects exactly as it was with a hollow-back shovel. Therefore, we have a product that is as cheap as the more or less useless hollow-back shovels, but which is just as durable as any shovel that was ever put on the market. We shall have testimony to that effect.

In order that Your Honor may see this taper, I have had one of these blanks cut up in sections to fit together to make a total of one. Suppose the clerk hands that to your Honor. You can see the graduation in the thickness. (The article in question was handed to the Court.)

I think your honor can see the difference in thickness. Of course, .030 is not a great deal to the normal eye, but
21 it is a very real difference in a structure of this sort.

We shall find that this was the first time that a strip of this width, maintaining those tolerances, maintaining a difference of .030, that was ever done.

Before we go on, I would like your Honor to turn to that document to see just what it is that we are seeking to claim.

The Court: Do you mean the statement of the Primary Examiner?

Mr. Borst: In item F you will find the claims. Those are the four claims that we are seeking to get a patent on. I think we should definitely understand just what those claims do seek to cover.

The first claim is the broadest. It calls for "a shovel of the hollow-back type"—now, that is the limitation we must keep in mind—"consisting of a single piece of strip steel having a uniform cross-section throughout its length"—stopping there just a minute, that means some section this way (indicating). It is of equal thickness throughout the whole length—"but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges, and comprising a blade and a tubular socket and a hollow shank portion connecting the socket with the blade and forming a continuation of the frog portion of the blade, whereby the shovel is substantially reinforced throughout a central longitudinal region compris-
22 ing the frog, shank, and socket and extending to the front edge of the blade."

Now, the second and third claims are distinguished from that in that they specify that this central strip is of a definite width:

"A hollow-back shovel of the type described consisting of a single piece of strip steel including a blade section and a tapering, tubular shank and socket section of circular configuration in cross-section, the strip steel having a central, longitudinal portion of sufficient width to include the frog and the line of junction between the blade and shank, and of substantially uniform thickness"—that width is of uniform thickness—"greater than that of the portions on each side thereof, the said central portion extending the entire length of the strip steel whereby the blade section of the shovel includes a reinforced, longitudinal central portion of greater thickness than the side portions and the frog and the shank and socket section are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade."

I hope I did not go too fast. I think your Honor can follow that. The distinction in that claim is that it does specify a definite width of uniform thickness.

Claim 3 is just a litle bit more specific in that it says that
that central backbone strip of uniform thickness is substantially one-fifth of that of the back edge of the blade.
23 The blade is 10 inches wide. This strip is 2 inches
wide. If the blade were 15 inches wide, this would be 3 inches wide. It maintains that proportion.

Claim 4 is a claim that was added during the prosecution to distinguish from the principal reference more particularly, in that it points out that the grain of the metal runs longitudinally. Now, your Honor can understand how important that is. The principal reference, you will see, is formed so that the grain of the metal runs transversely, and therefore has that inherent weakness, if indeed it could be made at all, and we contend that it could not be.

Possibly, before beginning to introduce my proof, your Honor would like to see what the principal references are. If you would like to do that, I would like to discuss them for a moment.

The Court: I think that will be helpful.

Mr. Moore: I presume you want to hear from me in an opening statement first?

Mr. Borst: If Mr. Moore wants to discuss those prior patents, I am very glad to defer to him, but I think your Honor should know something about that.

The Court: Suppose we hear from Mr. Moore, because, after all, the Patent Office relies upon these prior patents.

Mr. Borst: That is very true, and my answer to those can
be in the form of a final argument, or I can make a
24 statement after he concludes, if your Honor would
like.

The Court: Let us take that up later.

Opening Statement on Behalf of the Defendant

by

Mr. Clarence W. Moore

Mr. Moore: Section 4888 of the Revised Statutes, which is Section 33 of Title 35 of the Code, requires an applicant particularly to point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery. It is in conformity with that section of the Revised Statutes that the applicant here has presented the four claims of his application. Those claims are the measure of the invention. They are the definition of the invention.

If you will turn to Claim 1, you will notice it calls for a shovel of the hollow-back type. Then, going down to line 5 of the claim, it states:

"A shovel of the hollow-back type * * * comprising a blade and a tubular socket and a hollow-shank portion connecting the socket with the blade and forming a continuation of the frog portion of the blade."

Now, so much of the claim is undeniably part of the prior art. The claim in that language describes every hollow-back shovel that has been made, I believe, since the time of Lowman's patent in 1873. If there is any novelty in that claim, it is represented by the language:

25 "Consisting of a single piece of strip steel having a uniform cross-section throughout its length but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges."

There is a "whereby" clause in the claim, which sets forth the function of that reinforcement, but the real meat of the claim is in the description of the cross-section of the shovel.

I might say at this point that Mr. Borst has not mentioned the shank portion in his description of the hollow-back type shovel. It is the portion which is between the socket and the frog.

If your Honor will turn to the Lowman patent, which is Item A of our exhibit, he will see in such a figure as Figure 17 a hollow-back type of shovel. This Lowman patent I understand is the primary patent in the art. Lowman was the inventor of the hollow-back type shovel away back in 1873.

Lowman, I say, describes and illustrates the hollow shank, the socket, the frog, and the shovel part of the shovel, and then he, on page 2 of his patents, at line 12 and set forth in column 1, says:

"It will be obvious that the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the article, when made, will be exposed to the greatest strain."

26 In other words, he says that his shovel can be reinforced at the points of greater strain. Concededly, Lowman does not say what the points of greater strain are. It is assumed they will be the points at which the handle is connected with the shovel and the central region of the shovel, but if there be any doubt about where the point of greater strain is, that doubt is resolved in the patent to Myers, which is Item B of our exhibit, and which in column 2, line 72, says:

"The greatest strain on the shovel blade, and also on the straps, is always at, along, and on the longitudinal center line of the blade and straps."

The Court: "Is that the Myers patent?"

Mr. Moore: That is the Myers patent, yes. That is Item B.

The Court: Line 72.

Mr. Moore: Column 2, line 72:

"The greatest strain on the shovel blade, and also on the straps, is always at, along, and on the longitudinal center line of the blade and straps; hence it will be apparent that the greatest thickness of metal should be at that part of the blade and straps."

Now, if your Honor will turn to sheet 1 of the drawings accompanying that patent, he will see that in Figure 3 there is shown a cross-section of the shovel blade, a cross-section which shows that the blade is fixed at its center, tapering on either side of that central portion.

27 Now, the Surbaugh patent, which is Item C of our exhibit, is similar in its construction to the Myers patent, but whereas the Myers patent shows a strap type of shovel, this Surbaugh patent shows the hollow-back type. As shown, for instance, in the cross-sectional view in Figure 2, Surbaugh's shovel is reinforced at the portion 12 for the obvious purpose of giving strength to the shovel at that portion. Surbaugh says, for instance, on page 1, lines 82 to 85:

"By using the reinforcing blade 12 in light shovels it so strengthens the blades that a shovel of comparatively light character can be used in doing exceptionally heavy work."

In column 1, line 16, Surbaugh says:

"A further object of the invention consists in the provision of certain means for reinforcing the weak portions of the shovel, spade and scoop blades as, for instance, at the point of the blade and at the end of the frog."

The reinforcement at the point of the blade, of course, would prevent this forming of a concavity that Mr. Borst referred to in the shovel he exhibited.

At line 74, column 2, Surbaugh says:

"When spades and scoops are manufactured from thin sheet metal the metal is apt to break under great stress on a transverse line which intersects the point where the frog merges with the blade."

That breakage Surbaugh proposes to do away with
28 by his invention.

There is a fourth patent in our exhibit. That is a French patent. The important figure of that patent is Figure 14, which shows the stamping out of a shovel blank from a rolled sheet of metal, and which, in Figures 17, 18, 19, 20, and 21, shows shovels having reinforced central sections.

Some reference has been made here to the limitation in Claim 4 of the longitudinal character of the grain, the grain running longitudinally of the blank. If there is anything to that limitation, may we say that it appears that the limitation was introduced into this application by an amendment, and the very fact that the limitation was not within the original specification indicates that it is not a matter of very great importance.

We will contend that the claims are fully met in the patents cited in the answer and that the plaintiff is not entitled to any one of the claims in suit.

Mr. Borst: I think, your Honor, I shall begin the introduction of my proof, unless you would like to know my position now with respect to the prior developments. That will develop during the trial.

I would like your Honor to appreciate one or two points as the testimony goes in. In the first place, both the Examiner and the Board relied heavily upon that Myers patent,
and admittedly that is not the type of shovel which
29 we are claiming; but their logic was this: that Low-
man away back in 1873, had stated that he had in mind the idea of rolling his sheet metal so as to give added thickness, and hence strength, where it was needed. In the light of present-day knowledge, of course, that seems like

a significant statement. We have to have in mind, first, that in spite of the fact that 1873 was nearly seventy years ago, a thing of that sort was never given to the trade. That did not advance the art one bit, until Mr. Finkes gave this to the world.

One other thing about it. Your Honor will learn that it will not be possible to roll sheet metal in a graduated thickness. Hence that suggestion of Mr. Lowman was a pure figment of the imagination, without practical value.

We shall learn that the Myers shovel was never made, that it was not practical, that it was of a different type, and it therefore seems entirely unjust arbitrarily to combine those two failures in the prior art and say that together they constitute an anticipation. That is the position which the Patent Office and the Board took.

I think the one we need mention is the Surbaugh, because neither the Examiner nor the Board referred to the French patent. As a matter of fact, you can see it is so far afield that I do not think we need take any time on it. The Surbaugh patent showed a rib running right down the center, a rib of substantial height, and with very definite, abrupt side walls. That is the element that is numbered 12. In the construction of Figure 6, he proposes to put in two ribs.

Now, the function of a rib, as will be brought out in the testimony, is merely to stiffen, and Mr. Surbaugh—and that appears quite clearly from his description, from his exposion—says:

"In time the metal along the above noted line will crystallize, causing the blade to break."

That is in column 2, line 78.

Then down at the very bottom of the first column, the last line, he says: "Adding rigidity and strength to the sheet."

That word "rigidity" is a significant word. His purpose was to prevent the blade from flexing and hence crystallizing. It was in no sense the construction of the modern shovel. Such a shovel, we shall learn, would be useless, and, as a matter of fact, that did not go into use.

Furthermore, the claims here are distinguished from a rib. They say a thickened center, with uniform tapering right down to the sides. That is a very different thing, we will learn, from having a rib down the center, which would be utterly useless—just a mere paper patent without any practical value whatever.

That, in brief, is the attitude of the applicants with respect to that prior art. With that, if your Honor would like, I shall begin the introduction of proof. I may put the proof in just a little bit out of order, for this reason:
31 I have a witness who is here from Hagerstown, a
gentleman who wants to go away at noon. His story would logically come a little later in the proof, but I shall put him on first, although I do want to explain that it is a little bit out of order.

The Court: Is it satisfactory to you, Mr. Moore?

Mr. Moore: Surely, it is.

Evidence on Behalf of the Plaintiffs.

Thereupon **R. D. McKee** was called as a witness for the plaintiffs and, being first duly sworn, was examined and testified as follows:

Direct Examination.

By Mr. Borst:

Q. What is your full name? A. R. D. McKee.

Q. Mr. McKee, you live where? A. Hagerstown, Maryland.

Q. You are a gentleman of what age? A. 67.

Q. What is your business? A. Jobbing, retail hardware.

Q. What is the name of your business? A. R. D. McKee.

Q. How long have you been in this business, Mr.
32 McKee? A. Forty-nine years; thirty-nine years on
my own account.

Q. Previously what were you doing? A. I was with my uncle and father in the same business.

Q. At the same location? A. No; within two doors.

Q. It was in Hagerstown? A. Oh, yes.

Q. Now, does Hagerstown have any advantageous locatin so far as the distribution of hardware in the United States is concerned? A. Yes. We have three or four railroads centering there.

Q. What about the city of Baltimore? Is that in any sense looked upon as an important center of distribution? A. Oh, yes, Baltimore is.

Q. Hagerstown is how far from Baltimore? A. Eighty-five miles.

Q. Would you say that your hardware distributing business would be representative of conditions in the East here? A. I think so, yes.

Q. Now, you are acquainted with a product of Union Fork and Hoe Company known as the Razor-Back Shovel, are you? A. Yes, sir.

Q. Do you handle that shovel? A. Yes.

33 Q. How many different styles of it? Do you know? A. Well, we handle only the hollow-back.

Q. Only the hollow-back? A. Yes.

Q. Do you have the hollow-back shovels of this name with long handles and D handles both, or only with one handle? A. We may have some D handles—I am not certain about that—but principally long handles.

Q. How about points? All round points? A. Practically all round points.

Q. I will show you a shovel, which will later be marked in evidence here. Do you recognize this as a hollow-back shovel (indicating)? A. Yes.

Q. Is this the shovel that you are testifying about that your company handles? A. I believe so.

Q. Will you look at it and make sure? A. Yes, that is the same shovel.

Q. How long has your company or business handled this shovel? A. I think three to four years. I am not positive about that.

Q. Prior to that had your company handled other makes of shovels? A. Oh, yes.

34 Q. Throughout your whole experience have you been handling shovels? A. Yes.

Q. Various kinds and types of shovels? A. Well, principally strap shovels, solid-back strap shovels; a few hollow-backs.

Q. Not many hollow-backs? A. Very few.

Q. Why did you not handle many hollow-backs? Can you tell? A. For the reason that there was a prejudice against them on account of their weakness. They would not stand up.

Q. You recognize this Razor-Back as a hollow-back shovel, do you? A. Yes.

Q. Do you find the same prejudice with respect to this construction of hollow back shovel? A. No. We have had no complaints on this shovel at all.

Q. Will you tell me, in terms of volume of business, what has been your experience with this Razor-Back shovel? A. Well, it was pretty hard to introduce, on account of the experience people had with hollow-back shovels in the past, but we did get them started and have had follow-up orders right along on them and have had no complaints—practically no complaints. Of course, you will have a bad
35 shovel of any make now and then, but I would say less with this than possibly with the strap shovel.

Q. That is, less with this than the other shovels that you have been handling all these years? A. Yes, but formerly I do not believe 5 per cent of the shovels we sold were hollow-back shovels, until this Razor-Back Shovel came out.

Q. What is the situation now? A. Well, I believe possibly 33⅓ or 40 per cent of the shovels we sell are hollow-back.

Q. And that in spite of the fact that you sell practically just the one style; is that right? A. Yes.

Q. Mr. McKee, what is your opinion of this shovel? A. Well, the only opinion I can form of it is by the fact that people have taken to it and stick to it and buy it. It seems to have virtue.

Q. You know, do you, that this shovel has a thickened center tapering down to the edges? A. Yes.

Q. You say you have been in the hardware business for how many years? A. Forty-nine.

Q. Forty-nine years. During that period had you ever
seen or known of a shovel that had a similar thick-
36 ened central longitudinal portion? A. No, I had
never heard of a shovel of that kind.

Mr. Borst: I think that is all, Mr. Moore.

Mr. Moore: No cross-examination.

(The witness was excused.)

Thereupon **Noble Jones** was called as a witness for the plaintiffs and, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Borst:

Q. What is your full name? A. Noble Jones.

Q. Where do you live, Mr. Jones? A. Canton, Ohio.

Q. You are how old? A. 60.

Q. What is your present business? A. At present I am doing some consultive work for a steel firm in the South.

Q. You were formerly connected with a steel rolling mill concern in West Leechburg, Pennsylvania, were you? A. Leechburg, Pennsylvania.

Q. What was the name of that concern? A. The West
Leechburg Steel Company.
37 Q. It has since become known by some other name?
A. It has merged with the Allegheny Ludlum Steel
Company.

Q. You were connected with that West Leechburg Steel Company in what way, Mr. Jones? A. I was works manager for fifteen years.

Q. What did that company make? What were its products? A. Their products were hot and cold rolled strip steel, and originally ingots of steel were manufactured.

Q. How long were you with that company? A. Fifteen years.

Q. Did you have previous steel mill experience? A. Yes, I did.

Q. Will you tell what that was, please? A. I was with the Sharon Steel Hoop Company for seventeen years as general superintendent there.

Q. Can it be said that you had many years' experience in rolling steel matters? A. It can.

Q. Do you recall some few years ago that a representative of the Union Fork and Hoe Company came to you with a problem in rolling? A. I do.

Q. Will you tell, in the first place, about when that was, as well as you can recall? A. As near as I can recall, it was in 1935.

38 Q. Will you just narrate what happened at that time? A. A representative of Mr. Nicholas of the Union Fork and Hoe Company came in to see me with a sketch showing a section of steel he wished made from high carbon stock. He asked me whether I could make it.

After looking it over, I told him I would like to consider it for a day or two and would let him know, but I believed I could. I let him know that I thought we could make it.

Q. Let me ask you first, What was this cross-sectional sheet that he wanted you to roll? A. It was a section of high carbon steel of approximately 10 inches wide, with the center .084 or .086, as I remember, a space of 2 inches in the center of the strip tapering down on either side to .054 on the edge.

Q. You say this was high carbon steel. Will you explain in the record what you mean by "high carbon steel"? A. Well, anything above 35 or 40 is termed high carbon, and this particular carbon, as I recall, was in the neighborhood of 60.

Q. When you say 40, 50, or 60 carbon, you mean forty-hundredths of one per cent, and so forth; is that correct? A. That is correct.

Q. That is the customary reference, the way to refer to it in the trade, is it? A. Yes.

39 Q. So that when you get to or above one-half of one per cent you call it a high carbon steel? A. Yes; even a little less than a half per cent.

Q. What effect does this relatively high percentage of carbon have on steel? A. Well, it causes more difficulties in rolling. It is hotter. It becomes hotter. It becomes more susceptible to tempering, because of the water you use in rolling, especially in light sections, as this section was.

Q. By "light sections" you mean the fact that it got down to .054 of an inch made it thin for your problem; is that right? A. Very often, and very hard to roll.

Q. Would it have been easier to roll had it been a less high percentage of carbon? A. Very much easier.

Q. Then you would be down in the range of what might be termed low carbon steel; is that right? A. That is right.

Q. Would low carbon steel be as durable as high carbon steel for shovel blades? A. In my opinion, no.

Q. Can you conceive of shovel blades being made of low carbon steel for heavy duty on gravel and similar uses? Can you conceive of that from a practical standpoint? A. Not to get life out of it, no.

40 Q. As a matter of fact, you know what heavy duty shovels are made from? A. Made from high carbon steel.

Q. So that this problem was one that was inherent in the problem of making shovel blades for heavy duty use; is that right? A. That is right.

Q. You say that your troubles were multiplied by the fact that it was high carbon steel? A. That is correct.

Q. You apparently indicated some hesitancy in making a direct commitment as to whether you could or could not do it; is that right? A. That is right.

Q. Why was that? A. Well, from experience in rolling high carbon into sections, there is great difficulty in view of this hardening effect of the steel; and the lighter the section the harder it becomes; whereas with soft steel you have a great deal to go and come on. Your steel is softer and it is more pliable and can be more readily reduced.

Furthermore, in introducing sections, the drafts in the various mills have to be arranged so that it is not too drastic. If it becomes drastic, which you are likely to do to retain heat to get it down, you may get a ruffled edge, a
washboard edge, or even cracking of the steel. That
41 very often happens in high carbon steel, where you
do not see it in soft steel or low carbon steel so readily.

Q. Let me pursue that a little bit further. In rolling, that is done to a greater extent at the edges than at the center. Does that mean a greater elongation at the edges than at the center? A. That is right.

Q. There is more metal displaced; is that right? A. Yes. That tends to give you that washboard edge effect. Unless that is properly proportioned in going down, why you will have that trouble.

Q. With a heavier cross-section you would have had the problem in less degree; is that true? A. That is true, because you would have had your heat. You could retain your heat.

Q. By that you mean that when you get down to these very thin cross-sections it cools faster? A. That is right.

Q. And the water pours over the rolls, does it? A. Yes.

Q. That is done in order to keep the temperature of your rolls down? A. That is right.

Q. Does that water strike the steel itself that is
42 going through the mill? A. It does.

Q. Is this known as a continuous product? A. The mill is rolled on a continuous mill.

Q. Will you tell what is meant by a "continuous mill"? A. A continuous mill is one in which the steel continues in passes, one succeeding the other.

Q. So that when the steel starts through, it goes on continuously without stopping through the successive passes; is that right? A. That is right. It is quite frequently in more than two passes at a time.

Q. By "passes" you mean the passage between rollers; is that right? A. That is right; between roll mills.

Q. You spoke of draft. Will you explain what you mean by "draft"? A. By "draft" we mean the amount by which we reduce the section of steel in each pass.

Q. That is, it goes down in stages rather than in one abrupt reduction; is that right? A. That is right.

Q. And each one of those reductions is known as a draft; is that right? A. A draft, yes.

43 Q. Now, did you have any precedent upon which you were able to draw in forming an opinion as to whether you could do this rolling or not? A. Yes, I did. We were called upon to roll a rim section for the Ford Motor Company, which was in some respects similar. It was softer steel, of narrower widths and heavier gauge, but it had a high center; and from the experience I had with that I felt pretty sure that we could go down with this high carbon if I would use more passes to do it, and that is the way it was done.

Q. How recently before that had you had this experience with Ford Motor Company? A. My recollection is about a year.

Q. Now, when Ford Motor Company came to you with that proposition of theirs, was it something new to you? A. It was.

Q. Had you ever known of a high carbon steel that had been rolled down to the gauge, and with variable thickness, such as called for by this request of Mr. Nicholas? A. Never; never knew of a case of that kind.

Q. Now, you expressed yourself as willing to take it under advisement, and will you tell what happened? A. Well, we designed the rolls, the shape of the rolls necessary to do this, and we set the mill up ready to make the trial.

It took about six or seven hours before we finally got
44 the mill adjusted to roll the shape required.

Q. Did you make any condition regarding the paying for these rolls? A. Yes. The rolling of this material was all predicated upon the company paying for the shape rolls that were used.

Q. You mean the Union Fork and Hoe Company? A. The Union Fork and Hoe Company, yes.

Q. Can you say why you imposed that condition? A. Well, that is customary in any shape work, because we never know what is going to happen in rolling shapes, and the rolls are not ordinarily usable for anything else after the steel is rolled.

Q. You went ahead and tried this, did you? A. We did.

Q. With what results? Can you tell? A. Well, with the results that we are making the same steel today in the same shapes.

Q. In other words, it was a success. Was the first piece that you put through a success? A. No, the first piece was not.

Q. Tell about that. A. There were several pieces put through. Some came through with this wash board I spoke of, too much elongation on the edge. So the drafts and the shapes of the mills had to be readjusted in order to go more slowly with it. That was done, and that corrected
45 the difficulties.

Q. You left that company after that, I understand? A. About five years ago.

Q. Was that company still making that product for Union Fork and Hoe Company when you left? A. It is.

Q. It still is? A. It is.

Q. Mr. Jones, I want to call your attention to a statement in a patent that has been placed in evidence here. This is the Lowman patent, No. 142,859. I show you a copy of this patent and call your attention to the statement in the first complete paragraph on page 2, particularly that part reading:

"Nevertheless it will be obvious that the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the article, when made, will be exposed to the greatest strain."

I also call your attention to the fact that previously the patentee of this patent stated, for example, in the first column of page 1, that:

"The blank is cut with shears or cutters from sheet metal of the required thickness for the intended shovel, spade, or scoop, as the thickness is not materially reduced by the after operations of swaging."

Will you tell me if you have any opinion as to the
46 practicability of that suggestion in the passage that
I read from page 2 of this patent (handing a document to the witness)? A. In my opinion, it can't be made from sheet metal, because sheet metal is worked differently.

Q. Will you explain now fully what you mean by that? A. In rolling sheets they take a bar. It is called a sheet bar. It may be three-eighths or a half inch thick, and probably eight inches wide, and various lengths, depending on the length of the sheet they want to roll. In order to get the width of the sheet, that bar has to be put in this way (indicating), turned around, and put in this way (indicating).

Q. I do not know whether the reporter gets that or not.

By the Court:

Q. You mean it is put through the roller? A. Yes, put through a roller, through a mill. It is put through longitudinally and then transversely in order to get width and length. If you put a shape in it, as soon as you have turned it you have rolled the shape out. I can't see how it is done with sheet metal.

Q. What do you mean by "shape"? A. If you put a high center in it, if this (indicating) was the strip, raised up that way (indicating)—suppose it had a shape on it—just as soon as you put it through this way, you roll that shape off (indicating).

47 By Mr. Borst:

Q. You have stated that the difference in thickness from the center to the edge was something like .030; is that right? A. Yes; about .030 or .032.

Q. Now, in high carbon steel is that a difficult shape to draw, maintaining, let us say, a tolerance of .003 plus and minus, and in the width which you have given? A. We are able to maintain that in that width. The tolerances usually allowed are .002 to .006.

Mr. Borst: That is all, Mr. Moore.

Cross Examination

By Mr. Moore:

Q. Mr. Jones, cannot the term "sheet metal" be applied to any piece of metal which is of minimum thickness with respect to length and width? A. Steel mill parlance usually takes anything from 24 inches; 23-15/16, I believe the definite denomination is. All over that it is a sheet. That is termed "sheet" and under that it is termed "strip" or "hoop," when it gets down to the narrow widths.

Q. Are not a piece of sheet metal and a piece of strip metal the same except as to the width of the piece? A. How is that again, please?

48 Q. You say that a piece of strip metal is distinguished by its width; is that true? A. That is right.

Q. And a piece of sheet metal is of greater width than a piece of strip metal? A. Yes.

Q. But they might well be of the same dimensions as to length and width? A. Well, when they take sheets and slit them, they are called slitted sheets. They are slit into narrow widths, but it is not a strip.

Q. Is not the term "sheet metal" a broad term? A. Not in steel mill parlance, no.

Mr. Moore: That is all.

(The witness was excused.)

Thereupon **Brice B. Sarver** was called as a witness for the plaintiffs and, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Borst:

Q. Mr. Sarver, you are connected with what concern? A. The Union Fork and Hoe Company.

Q. That is one of the plaintiffs in this case? A. That is right.

Q. Where is that concern located? A. The main office is in Columbus, Ohio. 49

Q. Do they have more than one plant? A. They do.

Q. What is your present position with the company? A. I am salesman.

Q. You came with the company when? A. In the spring of 1935.

Q. Where did you come from? A. Parkersburg, West Virginia.

Q. With whom were you connected in business down there? A. The Ames Baldwin Wyoming Company.

Q. What is the business of the Ames Baldwin Wyoming Company? A. Manufacturers of shovels.

Q. That is their principal business? A. Ordinarily they are known as dirt shovel manufacturers.

Q. That company was formed by an amalgamation or consolidation of different companies, I take it, from the name? A. That is right.

Q. How long were you down there in Parkersburg? A. I was in Parkersburg thirteen years continuously at this particular plant, under two different managements.

Q. What was the name of the company when you first went there? A. The Baldwin Tool Works.

50 Q. Later it became the three-named concern that you have mentioned? A. That is right.

Q. You were there for how many years? A. Thirteen years.

Q. You must have gone with them something like 1922, was it? A. That is right; spring of 1922.

Q. It was in 1935 that you came with the Union Fork and Hoe Company? A. That is right.

Q. Now, in what capacity, for what purpose primarily, did you come with the Union Fork and Hoe Company? A. I primarily came with them to put in a shovel plant for them.

Q. What had been your experience in the manufacturing of shovels down at Parkersburg? A. Well, I had thirteen years of experience. In other words, I started in the shipping department and I worked in practically every department in the plant. As I previously stated, I was with the Baldwin Tool Works approximately thirteen years, and for the first two years of the latter eight years I was there I was assistant superintendent and the other six I was general superintendent. With the Ames Baldwin Wyoming people I was general superintendent.

51 Q. You were called by the Union Fork and Hoe Company to put in a shovel plant, you say, for them? A. Yes.

Q. Had Union Fork and Hoe Company not been in the shovel business before that? A. Not to my knowledge.

Q. What was the business of the Union Fork and Hoe Company? A. Making and forming tools which were principally rakes, forks, and hoes.

Q. You finally succeeded in getting the shovel into production, did you, for Union Fork and Hoe Company? A. That is right.

Q. When did it finally get into production? A. In the spring of 1937, approximately. You are speaking of this particular shovel?

Q. Yes, I am speaking now of the Razor-Back. You understand what the Razor-Back Shovel is? A. I do.

Q. You tell what you understand it to be. A. I understand the Razor-Back Shovel to be the hollow-back type, one-piece construction, made from strip steel, with a heavy center running from the point of the blade clear

through to the end of the socket, that heavy center being
approximately a strip of steel 2 inches wide, with an
52 approximate thickness of .086, or a heavy 14 gauge,
we call it, and tapering down to each side to a light
gauge metal, which is approximately .054.

Q. In your shovel experience had you ever seen or heard of such a shovel before? A. I had not.

Q. Did the Ames Baldwin Wyoming Company make hollow-back shovels? A. It did.

Q. What were they made from? A. Strip steel.

Q. Where are these Razor-Back Shovels for the Union Fork and Hoe Company made? A. Frankfort, New York.

Q. Were you instrumental in installing the machinery and other equipment necessary for that purpose? A. I was.

Q. Now, you say that you are a salesman. You sell these shovels, do you? A. That is right.

Q. You went on the road when? A. In the spring of 1938.

Q. That was after you got these into production; you went out to sell them; is that right? A. That is right.

Q. How much of the country have you covered in
53 your travels in selling the shovels? A. About 44
States.

Q. There are other salesmen of the shovel, of course, are there not? A. Yes.

Q. Are you what might be termed the trouble shooter? A. In one sense of the word.

Q. So you are in a position to tell what success this shovel has met with in the trade, are you? A. I think so.

Q. Now, will you tell your experience and observations with respect to the selling of this shovel? A. Well, my first contacts in the sales department were with the contracting trade. That was for two reasons. The contracting trade is ordinarily a type of trade, I would say, that is most hard to sell to, and it thereby gave me some good experience in the sales work.

Lots of people have told me that a hollow-back shovel would not be accepted by the contracting trade for the reason that it would not stand up; and in all my experience with the contracting trade, I would safely say that 75 per cent of the shovels used by the contractors which I have contacted practically all over the country, more particularly in the East, were using a solid shank shovel.

I can say that I have had very good success in
54 selling contractors through every State that I have
contacted contractors in—not only contractors, but county highway departments. The first three months of my sales experience I sold seventeen county highway departments in one block; what I mean by that is seventeen distinct county highway departments in one block. I sold them in the State of New York. That was the Razor-Back Shovel. As far as I know, I would say 75 per cent of them are still using the Razor-Back Shovel. Quite a few of them I have made contacts with have used nothing else since buying this Razor-Back Shovel.

Q. Do you say this has replaced, to that extent, the solid shank shovel? A. I think it has in a great many sections, with a great many people. When I say "people" I mean contractors, highway departments, and such users of shovels.

Q. What can you say, from your observation and experience, regarding the durability or life of the Razor-Back Shovel in use? A. Would it be out of the ordinary to give you a couple of examples to show you what I mean by that? I can't recall the name of the contracting company. It was one of the large contracting firms in the City of New York, who put in one of the last buildings of Rockefeller Center. We gave him a half dozen shovels to test against a half dozen of competitive brand shovels,
which cost him approximately twice as much as our
55 shovels. The other competing shovel was an alloy
shovel. We only claim ours to be high carbon. I was told by him personally that our shovel outwore the alloy shovel, or the shovel costing approximatey twice as much.

To give you another example, approximately a couple of years ago we gave a dozen shovels to the State of North Carolina, the Highway Department. They had been buying an alloy shovel for years, probably ten or twelve years, paying a premium for it, I was told. We gave them a dozen shovels to test against those shovels. After the shovels had been in service approximately eight months, I was told personally by one of their purchasing agents that our shovels, the Razor-Backs, had outworn the alloy steel shovels one set, and they were on the second set. Consequently, this spring, through that test, we secured an order for 650 dozen shovels, and approximately two months later we secured another order for 650 dozen shovels.

Q. Would you say those experiences are typical or are they exceptional? A. I would say they are very typical.

Q. You spoke of an alloy shovel. Just tell what you mean by that. A. We in the shovel trade, when we speak of alloy, mean it must be 1½ per cent combined per cent of alloys. In other words, say you have 75 per cent nickel and 75 per cent manganese, which would make it an
56 alloy shovel—that is, added to a shovel—and any alloy shovel naturally would have carbon, as we know it, which would have high carbon content.

Q. With reference to these alloy shovels that you say did not last so long as the Razor-Backs in this competitive test, they were not shovels having thickened centers, were they? A. They were not.

Q. What shovels were they, do you know? What type of shovel? A. In the State of North Carolina they were hollow-back shovels, but the contractor in the City of New York—I can't tell you now; I am not positive, but I would say it was a strap pattern shovel. As well as I remember, it was a strap pattern shovel.

By the Court:

Q. How about this shovel in comparison with the so-called Skeleton shovel? A. In what respect?

Q. With respect to price and with respect to wearing qualities. A. Well, the Skeleton shovel is known as the solid shank shovel, forged from a bar. I will give you an example like this. When this shovel was introduced on the market, the list price, which is what the retail hardware man sells it to the customer for, was $15—

By Mr. Borst:

57 Q. That is on a dozen? A. A dozen, and it was only made in one grade.

By the Court:

Q. You are speaking now of what shovel? A. Of the Razor-Back. The Skeleton shovel was made in three grades, A, B, and C. The A grade at that time, as well as I remember, listed for $23.50, and B grade listed for $22.50, and C grade listed for $21, I believe. They are approximately the figures. In other words, the lowest grade shovel that they made was approximately around $21 in a heat-treated blade.

By Mr. Borst:

Q. The Court wants to know what about the comparative life of the two. A. That is your question?

By the Court:

Q. Yes. A. Well, I have made considerable tests. I have had tests made. We built a testing machine whereby we had the blades pass down through gravel, with four blades mounted on the machine at the time, which dug continuously through this gravel. I have tested them in an open pit, where I have put a man, in three shifts, night and day, each shovel handling the same amount of material.

I have observed tests where I have put out shovels with contractors here, there, and everywhere.

58 Regardless of whether it is a solid-shank shovel, a hollow-back shovel, or a strap shovel, as far as the

wear is concerned the steel will not wear any longer in a blade with a uniform thickness in a solid-shank shovel than it will in a strap shovel. In other words, the type of construction does not make the point wear—

By Mr. Borst:

Q. Is it true that the Skeleton shovel is just as thin at the point as it is around the edges? A. As I know it, it is.

Q. It is made durable at the shank; is that right? A. That is right, at the shank.

Q. Well, now, the Court would like to know this: In use how would the life of a Razor-Back compare with that of the solid-shank shovel? A. I think your strap shovel will not give you quite as much service as your solid-shank shovel, but the weakness in your solid-shank shovel is that it is a fact that they wear out in a cup shape. You can talk with any contractor or laborer that generally uses a shovel and knows what it is all about. When your shovel is wearing moon shape, as we term it, it is hard to go into the dirt.

By the Court:

Q. You are talking about the concavity? A. That is right. It wears out moon shape.

59 Whether it is a strap pattern or a hollow-back or solid shank, with uniform blade thickness—by which we mean, when we speak of the blade, the working end of your shovel—I do not think it makes a bit of difference about your type. One will wear as much as the other.

As I understand from experience in the steel game, approximately all your known high carbon shovels today are approximately of the same analysis.

Q. With respect to this experiment that you conducted with different shapes in the rolling process, did all those shovels develop this half-moon concavity at the end? A. I did not put the shovels through a long enough test to give that. I will tell you what happened in the last test. If I may, I will describe the machine. The machine was a box-like, table-like shape, approximately the size of this desk (indicating), having a large 3-inch shaft going through, supported by two bearings, and on that shaft there were four arms, one up like that (indicating), one down, one over here, and one over here (indicating). There were pieces here (indicating). We saw the handle off the shovel and each one of those arms. The shovel was clamped down like this and went down like this (indicating).

Now, in this testing machine we had ¾-inch limestone. In the last test I made I had two strap pattern shovels. I had a competitive A grade, which is a first quality
60 shovel, a hollow-back shovel. It was identically
the same as the farthest one in the box here. The Razor-Back shovel was the fourth.

On the second day of the test I opened up my testing machine. The two strap pattern shovels had given way in the frog. The blades had turned right back. In digging, they were not stiff enough in the socket—I do not mean the frog—and the points were not even digging in, so I removed those two. The blades were all right, but they had given way in the socket.

As well as I recall, I ran those approximately 1300 hours in through the testing machine, night and day. They traveled approximately 724 miles, to the best of my recollection, to the best we could calculate, through this gravel. That was the two shovels. The competitive hollow-back shovel was higher priced than ours. The point of the competitor's shovel wore off 7/16 of an inch.

Now, before placing these shovels in the testing machine, I measured back exactly one inch from the points of both shovels. The Razor-Back Shovel wore off one-quarter inch in the same test. The competitor's shovel wore off almost twice as much.

By Mr. Borst:

Q. Now, that competitor's shovel was not a solid-shank shovel? A. It was not.

Q. So that you really have not answered the 61 Court's question exactly as to how you would expect this Razor-Back Shovel to stand up in comparison with the solid shank. I assume you did not have a solid-shank shovel in that test? A. I did not in the last test I was describing.

Q. From your knowledge of the shovel, what would you expect would have been the comparative results had the solid-shank shovel been in that test? A. Identically the same.

Q. Identically the same with what? A. I had previously tested solid-shank shovels in my testing machine and with approximately the same results. I was just giving the last test I made in the machine.

Q. Would you expect that the solid-shank shovel would wear off at the point just as fast as the standard, ordinary strap type or hollow-back shovel? A. I would, assuming that your blades are approximately the same thickness, which ordinarily they are.

Q. But your solid-shank shovel would be stronger at the shank? It would not do that which you say was done with your strap and hollow-back shovel, namely, buckle at the socket and turn up; is that right? A. That is right.

Q. It would be more likely to stand that strain at that point; is that correct? A. That is right.

62 Q. Did they make strap type shovels at the Baldwin Tool Company and later on the Ames Baldwin Wyoming Company? A. That is right.

Q. And they made some hollow-backs, you say? A. That is right.

Q. Now, I wish you would explain and illustrate by examples that you have here what is meant by a "hollow-back" and what is mean by a "strap shovel." I am doing this to get it in the record. A. Do you want the hollow-back and strap shovel?

Q. I would like you to explain those two. A. Well, your hollow-back shovel and your strap shovel are distinctly two different types of shovels. There is as much difference as there is between an automobile and a wagon, you might say. Your hollow-back shovel is of one-piece construction, made from strip steel, as we know it today and from all my experience in the shovel game.

Your strap type shovel has been made in two different ways: one, by riveting the front and back strap to the blade, and the other by welding the front and back straps to the blade. In other words, today the riveting of the front and back strap to the blade has been practically eliminated.

Q. You have here among these exhibits a typical hollow-back shovel made from strip steel? A. This (indicating) is a hollow-back blade which is made from strip steel. So is this (indicating). 63

We mean by "strip steel" it comes in long sheets, strips cut up into multiples, from which we trim a blank that is similar to the shape of this (indicating); when the blade is one-piece construction, this (indicating) being the blade, this being the frog, this being your socket, that portion which goes into your handle (indicating).

Now, what is known as the strap pattern shovel is what we know as a three-piece, where the straps are either welded or riveted, which today, as I said, is practically eliminated. They are usually welded to the front and back.

Here (indicating) is a strap pattern shovel, with the front strap removed, which shows you how that is done. Here (indicating) is the back strap, this (indicating) being soft metal, this (indicating) being soft metal, and the blades of high carbon steel (indicating).

Mr. Borst: I would like this blade which the witness produced and stated to be a typical hollow-back shovel blade marked in evidence as Plaintiffs' Exhibit 2.

(Article referred to was marked Plaintiffs' Exhibit 2 and was received in evidence.)

Mr. Borst: This strap pattern shovel blade with the handle sawed off that the witness produced I will ask to be marked in evidence as Plaintiffs' Exhibit 3.

(Article referred to was marked Plaintiffs' Exhibit 3 and was received in evidence.)

64 The Court: Are there any objections to these?

Mr. Moore: No objection.

Mr. Borst: I would like to have marked in evidence as Plaintiffs' Exhibit 4 this strap type shovel that the witness produced.

(Article referred to was marked Plaintiffs' Exhibit 4 and was received in evidence.)

By Mr. Borst:

Q. Will you tell me what is the fact regarding the comparative strength and weaknesses of the standard old-type hollow-back shovel? A. Well, as they wear what we call moon shape—that is the general term we use for it—they crack and break ordinarily, or give way at the point of frog and at the sides of frog, and very often give way down in the socket here (indicating).

Q. Is that what occurred to the hollow-back shovel that was used in the test that you spoke of—gave way at the socket? A. It broke right in here (indicating).

Q. You are pointing now to the hollow shank? A. The hollow-back shovel. In the last test I made it cracked about a half inch right in there (indicating). It would probably have broken off in another day's run, at least, I would say.

Q. Does this Plaintiffs' Exhibit 2 illustrate those weaknesses that you speak of, namely, the tendency to wear off at the point where the half-moon shape is and the tendency to crack around the frog? A. Yes, particularly the frog. 65

Q. It is also worn at the point? A. That is right.

Q. Do you know anything about the history of this particular shovel? A. I do not.

Q. Where did you get it from? A. I got that from a contractor in Columbus, Ohio. Who, I could not tell you right now.

Q. Now, turning to this strap shovel illustrated by Plaintiffs' Exhibit 3— A. I beg your pardon. This came from the County Highway Department in Columbus, Ohio, whatever county Columbus is in. I cannot tell what that is now.

The Court: It is Franklin County, is it not?

The Witness: It probably is.

Mr. Borst: I am not sure.

Mr. Moore: Yes, your Honor, it is.

Mr. Borst: The witness was referring to Plaintiff's Exhibit 2, Mr. Reporter, for the record.

By Mr. Borst:

66 Q. Does Plaintiffs' Exhibit 3 illustrate the inherent weaknesses in strap shovels? A. It does.

Q. You said that a strap shovel is made of three pieces; is that right? A. That is right, as I know it, and as I know the shovel manufacturing trade.

Q. This Plaintiffs' Exhibit 4 quite clearly shows those three pieces, does it not, one being torn off altogether and the other having the line of welding clearly discernible? A. That is right.

Q. You said something about soft steel and high carbon steel. What did you mean? A. Well, the straps are made from what we call low carbon, probably around 12 or 15 carbon, or a little less, if we can get it, the blades being of high carbon steel.

Q. Why do they make the straps of low carbon steel? A. In that particular shovel there (indicating) your handle has what we call a deep double bend; and, ordinarily speaking, after the blades and straps are formed the straps are spread open in order to insert the handle. They must be soft in order to get them to roll and lay—what we call the lays of a handle.

If I may have that second shovel, I can show you more what I mean. This (indicating) is kind of a poor example here to show you, but if we made our straps, front and back, at the high carbon, as we do the blades, then we could not lay this smoothly to the wood, to prevent cutting 67 your hand and to give you strength, without doing it high, which would burn up the handle. If it was high carbon, we would burn our handle. So this is low carbon steel, in order that we might roll that through a set of small steel form rolls to lay it to the handle, to prevent cutting your hand and to give it strength and shape.

Q. You had how many years' experience in the making of strap shovels? A. Thirteen years, approximately.

Q. So you are speaking now from that wealth of experience? A. I am.

Q. Does this shovel that you have just been talking about illustrate also the weaknesses of a typical strap shovel? A. Very much.

Mr. Borst: I will ask that this also be marked as Plaintiffs' Exhibit No. 5.

(Article referred to was marked Plaintiffs' Exhibit No. 5 and was received in evidence.)

By Mr. Borst:

Q. This shovel that I had in my hand is a product known as the Razor-Back Shovel, is it (indicating)? A. Yes.

Mr. Borst: I think I will have this also marked as an exhibit. This will be Plaintiffs' Exhibit 6.

(Article referred to was marked Plaintiffs' Exhibit 6 and was received in evidence.)

68 By Mr. Borst:

Q. I have two shovels in my hands. Will you tell what this one in the left hand is (indicating)? A. It is a hollow-back shovel.

Q. Is that simply another example of a hollow-back shovel, showing how it wears off at the point? A. Yes.

Q. Since that is merely more or less of a duplication, I shall not put that in.

What is this shovel (indicating)? A. That is a Razor-Back hollow-back shovel.

Q. What do you know about the story of this? A. Well, that shovel has been in service approximately two years. I can't say it was in continuous service, but the shovel is one of the first shovels that we made. The reason I say and know that is because of the shortness of the socket. In other words, that is approximately 9 inches, where today the socket has been lengthened and is approximately 11 inches, being of the strata in here (indicating), which is different from the shovel of today.

The handle has been either worn out or broken or for some reason removed, and that is a repair handle which has been placed into the shovel. You will note the shovel has held its shape very nicely, I would say.

Q. Did you measure this to see whether it had been
69 shortened in use or not? A. It had.

Q. How much had it been shortened? A. Approximately a half inch.

Q. It still was in the same shape? A. Yes.

Q. Where did you get this? A. W.P.A. Warehouse in Columbus, Ohio.

Mr. Borst: I ask that this be marked "Plaintiffs' Exhibit 7."

(Article referred to was marked Plaintiffs' Exhibit 7 and was received in evidence.)

By Mr. Borst:

Q. Can you say anything about the attitude and conduct of competitors respecting this shovel? A. In what respect, Mr. Borst?

Q. When you first brought this out did your competitors have any shovel that was really competitive in price or class or construction or type? A. No, they did not.

Q. Who are your principal competitors? A. Ames Baldwin Wyoming Company, American Fork & Hoe Company, Wood Shovel & Tool Company, Ingersoll Steel & Disc Company. Those are the principal competitors.

Q. Would you say the first two you have men-
70 tioned are the largest competitors? A. Yes, that is
right. The first one I mentioned was the largest, Ames Baldwin Wyoming, and the American Fork & Hoe, and the Wood Shovel & Tool are big manufacturers in shovels.

Q. Did the American Fork & Hoe display any reaction at all when this shovel first came on the market, to your knowledge? A. Some time afterwards, not a long time, that this shovel came out they came out with a shovel with a blade similar to Plaintiffs' Exhibit 2, made approximately like that, with what we call a straight top socket, and with a red handle, and they called it the "Dauntless."

Q. You say it had a red handle? A. That is right.

Q. One that looked, in other words, some thing like your product? A. That is right.

Q. Did the American Fork & Hoe have already on the market a solid-shank shovel? A. Oh, yes.

Q. Did the Ames Baldwin Wyoming Company also have on the market a solid-shank shovel? A. They did.

Q. Is this shovel which I show you the product of one of those companies? A. It is.

71 Q. That is a solid-shank shovel, is it? A. That is
right.

Q. Made by whom? A. Ames Baldwin Wyoming Company.

Mr. Borst: I would like to have that marked in evidence.

(Article referred to was marked Plaintiffs' Exhibit 8 and was received in evidence.)

Mr. Borst: In that connection, your Honor, I would like to put in evidence the Skelton patent on that. It was referred to in the record of the case, and I think it is appropriately in the record. This is Skelton patent, 757,783. That will show how the Skelton solid-shank shovel is made.

The Court: Have you any objection?

Mr. Moore: No objection.

(Document referred to was marked Plaintiffs' Exhibit 9 and was received in evidence.)

By Mr. Borst:

Q. Did the American Fork & Hoe Company go further later on toward approximating the construction of this Razor-Back Shovel? A. I would say to some extent.

Q. What did they bring out? A. What is known as their Taper Forged here.

72 Q. Is this a blank from which the Taper Forged is made (indicating)? A. I understand it is.

Q. Will you explain the character of that (handing an article to the witness)? A. From an examination of this blank, as I see it, there is a heavy section centered around in your frog here—what we would call a frog there—and this portion is the strap, being heavy here, and tapering down to the end of your socket and also tapering down and out to probably a uniform thickness throughout the rest of the blade, with the exception of the heavy portion which is formed in here (indicating). This frog tapers down to here and tapers down to there (indicating). It tapers from the thick center down to the edges here.

Mr. Borst: There is a patent, your Honor, on that construction, which is also referred to in the record, and it is the Milligan patent, 1,898,590, and I think appropriately that might be put in the record. We shall make reference to that. I therefore offer that.

(Document referred to was marked Plaintiffs' Exhibit 10 and was received in evidence.)

By Mr. Borst:

Q. This Milligan patent was applied for in 1931 and was issued in 1933. When was it, to your knowledge, that the

American Fork & Hoe brought out the shovel such as is shown in this construction (indicating)? A. Be-
73 tween 1939 and 1940, I would say; approximately in there.

Mr. Borst: I will ask to have marked in evidence as Plaintiffs' Exhibit 11 that blank that you have testified about.

(Article referred to was marked Plaintiffs' Exhibit 11 and was received in evidence.)

The Court: Is that the so-called Milligan blank?

Mr. Borst: That is the Milligan blank, yes. Your Honor will see that that is a forged product. Your Honor will see that that is made like the Skelton shovel, made from a blank cut off from a bar. That is shown in the lower figure, Figure 4. When they get done they have the shape of a hollow-back shovel, not the shape of the solid shank shovel; but the feature that was patented in this Milligan patent was the fact that it was made especially thick around the frog. You see that triangular piece in Figure 1. That is indicated by a dotted line. That is made thicker. Then it is tapered down evenly from there in all directions. That is a forged product and not a rolled product, and that blank which we have just marked in evidence shows very clearly that thickened frog portion.

By Mr. Borst:

Q. This is a True Temper, so-called, shovel made from that Milligan blank; is that right (handing an article to the witness)? A. So I understand it.

Mr. Borst: I think it is enough to exhibit it.

74 The Court: That is a forged product?

Mr. Borst: That is right, this is forged.

The Witness: That is, it is not made from strip steel.

By Mr. Borst:

Q. It is forged hot; is that right? A. That is right. It is forged and rolled. The blade is rolled, as far as that is concerned.

Q. It is rolled from a red hot bar? A. That is right; it is forged and rolled from a bar of steel.

Mr. Borst: I will have this final product marked in evidence, then, as a finished True Temper Taper Rolled shovel.

By Mr. Borst:

Q. That is what the American Fork & Hoe call it, do they? A. They call it Taper Forged, as I understand it.

(Article referred to was marked Plaintiffs' Exhibit 12 and was received in evidence.)

By Mr. Borst:

Q. Now, what did the Ames Baldwin Wyoming Company do? A. Well, the Ames, immediately after our shovel was introduced on the market, came out with what was known as their Blue Streak, with a handle painted blue and a black blade, and a blade, I would say, identically the type of Plaintiffs' Exhibit 2 here, with uniform thickness, approximately 16-gauge blade.

A year and a half later—something like that—they
75 came out with another shovel they call their Ram.
That was their trade name, and they called it their Taper Rolled blade, which we understand to be in direct competition with the Razor-Back shovel.

Q. How did the prices compare? A. The Ram shovel is today, and I have known it to be for the last year, the same price as our Razor-Back shovel.

Q. What about the price of the Taper Forged shovel? A. It is the same price, I understand, as our Razor-Back.

Q. How does the Taper Rolled shovel compare in construction? A. Well, as I see it, the Taper Rolled made by Ames—is that what you want?

Q. This is the Ames Baldwin Company product. A. Well, the big difference in the construction of the blade is that we have the heavy center going from one end to the other, where they start with approximately a 15-gauge blade, and they catch up on their multiple about half way, and draw out approximately 6 inches of the blade. That is, their roll catches right across there and pulls that entire portion of the blade out, draws it out from probably 3 inches to 6 inches, drawing it down to approximately 16 gauge on the point. In other words, the upper half is probably 14 gauge, near that, and the lower half we will say is around a 16 gauge.

Q. How does that compare, finally shaped, with
76 this blank which is Plaintiffs' Exhibit 11? A. Well, with the shape—

Q. I am talking about the cross-sectional shape. A. The cross-sectional shape. Well, it differs to this extent. This (indicating) is much more heavy with, I would say, approximately uniform thickness throughout the rest of it, whereas this Baldwin blank, when they trimmed it out the blade was not full length. They conserve steel, you might say. They roll this steel out to give it added length to trim it, but they made it thin on the wearing portion, at the tool end of the shovel.

Q. That was a cold rolled proposition? A. No, it was not. That was hot rolled.

Q. That is the way the Ames Baldwin Wyoming Company makes it? A. That is the way I understand it.

Q. They buy blanks of a certain thickness that are shorter than the finished shovel blade; is that correct? A. That is right.

Q. And then they roll out part of that to complete the length of the shovel blade? A. That is right.

Q. The part that they roll out being thinner than the rest of the blade? A. That is right.

77 Q. So they have greater thickness, then, around the frog; is that correct? A. That is right.

Q. When they get done they have a hollow-back shovel; is that right? A. That is right. That is speaking of the Ram shovels.

Q. I do not know what the name is, but it is this Taper Rolled that you are talking about. A. Taper Rolled, that is right.

Q. Is that known as the Ram? A. That is right. That is the trade name for it.

Q. You say the price of that is substantially the same as the price of the Razor-back? A. That is right.

Q. I have some literature here, which I think you will recognize, regarding these products of the American Fork & Hoe and of the Ames Baldwin Wyoming Companies. The American Fork & Hoe product is known as one of their True Temper products; is that right? A. That is right.

Q. And that name appears upon the shovel, Plaintiffs' Exhibit 12? A. Yes.

Q. Do you recognize this literature that I hand
78 you? (Handing documents to the witness.) A. I do.

Q. Will you tell, please, what that is. Look through it all. A. This is a folder here describing their True Temper Taper Forged shovel.

Q. You say that that product was brought out to compete directly with your Razor-Back; is that correct? A. That is my understanding.

Q. When was it brought out? A. Sometime between 1939 and 1940.

Mr. Borst: These papers consist of a circular letter of the American Fork & Hoe Company dated August 1, 1939, and one large circular of four pages and one small folded circular. I would like these marked collectively as an exhibit for the plaintiff.

(Documents referred to were marked Plaintiffs' Exhibit 13 and were received in evidence.)

By Mr. Borst:

Q. What I show you now is what (handing documents to the witness)? A. This is a letter to the jobbing trade, I would say, by the Ames Baldwin Wyoming Company, and a folder describing their Ram shovels and spades, which shows very exclusively, as they say, five features, labeled "Taper Rolled."

Q. This letter is dated September 8, 1939. Would
79 you say that is about the time that Ames Baldwin
Wyoming Company brought out this Ram shovel?
A. That is about right.

Q. And that circular illustrates accurately and correctly the construction of the Ram shovel? A. As I understand it, it does.

Q. You meet this in competition in your travels, do you not? A. I do.

The Court: These are being offered as probative value that this shovel was acceptable in the trade?

Mr. Borst: That is right, and the competitors were drawn into close imitation, although they have observed the patent which they anticipated would be issued on this product.

I ask that this Ames Baldwin Wyoming letter and folder be marked collectively as Plaintiffs' Exhibit 14.

(Documents referred to were marked Plaintiffs' Exhibit 14 and were received in evidence.)

By Mr. Borst:

Q. I would like to call your attention, Mr. Sarver, to the Myers patent, which is Item B in Defendant's Exhibit 1. I will show you a copy of that patent. You are familiar with that patent, are you (handing a document to the witness)? A. I am.

Q. Have you ever seen the shovel which is shown
80 in there on the market? A. I have not.

Q. Now, will you tell me your understanding, and will you make any comments that you want, regarding this patent? A. Well, in the first place, here in Figure 1 they show this being trimmed out by the dotted lines; and in Figure 2 and Figure 3 they show cross-sections of this supposedly rolled blade.

Now, then, we turn over to Figure 5, and I see that this shovel has a front strap and a back strap.

Now I go back to Figure 2, particularly Figure 3, and I see one piece of metal there. When I turn back over here again to Figure 5 I see a front and a back strap.

He is showing a cross-section here of the completed rolled blade, and he has outlined it as it would be trimmed for a shovel, ready to be shaped and given a form so that the handle might go in. Over here I see he has two straps, but over here (indicating) only one.

I assume from this drawing that that is all complete there, because he shows the trimming form stage, but where is his other strap? I do not see it. How is he going to get it?

In the first place, as I know it today, shovels being made from a high carbon to an alloy steel, if it was possible to make this shovel, those straps would be the same as his
blades, there is no doubt, from the way he has made
81 this, or trying to show it was made. It would be stiff
and I would say it would be an impossibility to lay
it down with the modern equipment they have today in manufacturing a shovel—in other words, to lay that strap to the handle, where it was made from a high carbon steel, regardless of whether it was heat treated or not.

Q. You have stated and illustrated by specimens that you have introduced—for instance, this specimen which is Plaintiffs' Exhibit 4—that a strap shovel is made of three parts—that is, two straps welded on to a blade—and you said, as I recall, that those straps were of soft steel, that is, low carbon steel? A. That is right.

Q. And you explained the purpose of that. Now, would you find that capability of using the lower carbon steel—that is, in the straps—present in this Myers patented construction? A. The contents of your straps and blade would be identically the same, if I understand it from reading this.

Q. So that if you had a high carbon steel for your blade, you would have a high carbon steel for your strap? A. That is right.

Q. Would you consider that feasible? A. It would be
very feasible if you could lay it to your handle, but
82 as we know it today, it is an impossibility, because
there is no doubt that manufacturers today would

put a high carbon strap in there, because it would get more strength if they could lay it to the wood, but if you would heat your high carbon material, as I say, to form it, or to lay it to that handle, you would then destroy your handle. It would be desirable to have it on there if it could be done.

Q. But in practice you do not do it; is that right? A. That is right.

Mr. Borst: Your Honor, there is a patent to Myers that issued on the same date as the patent which is now exhibited.

The Court: You mean different patents?

Mr. Borst: It is a different patent. This is 340,607—the one I have in my hand—and your Honor will see it shows the method of making a blank from which Myers intended to make his shovel. I think, to make the story complete, that ought to be in the record. I offer that.

Mr. Moore: It does not seem to be tied up with the Myers patent. Othervise I have no objection.

The Court: Very well, it will be received.

(Document referred to was marked Plaintiffs' Exhibit 15 and was received in evidence.)

By Mr. Borst:

Q. Mr. Sarver, there is in evidence as an exhibit of the defendant a patent to Surbaugh, No. 1,083,952. I show you
a copy of that. Are you familiar with that (handing
83 a document to the witness)? A. I am.

Q. Will you tell me from your experience what is the function of a rib such as shown there? A. I would say for stiffness.

Q. What are your comments, if any, regarding the feasibility and practicability of that disclosure? A. Well, my comments are these. As we know it today, you do not want stiffness in a shovel. You want flexibility. You want a shovel to maintain its shape, yet so you can flex or bend it.

I might put it this way. An automobile spring will flex back and forth a million times, but it will not break if it is made from good steel and well tempered. I think the same thing is true of shovels today. They will flex, and in flexing they not only protect, I think, the user, but they protect themselves from giving way at some designated point.

In other words, if the blade of this shovel was made rigid, regardless of whether it was this blade or any blade, when a man was spading with that shovel or prying up with it or lifting a heavy load with it, or whatever it might be, all of your strain would then naturally come at some given point. Then if your blade was perfectly stiff, it would more than likely come at the top, throwing all your strain at the top of your socket, whereas if that blade had flexibility and
84 would maintain that, it would give.

In other words, we have what we call a shock load. If you pull something on a pry and give it a shock pull—what I mean by "shock" is a snap or a quick jerk or a blow—if there is not some give or spring somewhere to gradually take that up, something is going to happen if there is enough force exerted.

As we know manufacturing today and the general practice, you do not want a stiff, rigid blade. You want a blade that is flexible—that is, that will bend and still come back and hold its shape. I do not believe you would get it in this.

Furthermore, I have studied this particular drawing and patent quite a bit. This rib runs down the center, with the balance of the blade being of uniform thickness. It has been my observation that the wear on your shovel gradually decreases as it goes toward the side. Here you have a narrow strip and then you have a shoulder there (indicating), which naturally would be a weak point, but I assume that blade would wear down like that (indicating).

Q. Indicating half moons. A. No, it would not be half moons. I do not mean that. Your heavy part would stick out there and this part would wear out similar to that shape (indicating)—I don't know what you would call it—having a tendency at that point to wear from digging the dirt. In other words, it would not wear, as I see it, that way with that construction.

85 Q. You indicated a rounded concavity on each side of the center in this Razor-Back blade that you used for illustration; is that right? A. That is right.

Q. In other words, with that rib down the center, it would stand out, not wear away, whereas it would wear away on both sides? A. That is right.

Q. This rib of the Surbaugh patent has abrupt sides, does it not? A. That is right.

Q. And those abrupt sides, which are a characteristic of any stiffening rib, prevents it from flexing in a plane at right angles to those sides; is that correct? A. I think so.

Q. What difference does it make if, instead of having those abrupt sides, you did what is planned in the patent in issue, namely, tapered it off from that center to the side edges? A. You would have your flexibility there and you would have a much more uniform wear.

I would like also to state that the average user, particularly of the D handle type shovel, has either his right or left hand on this portion of the shovel (indicating), the socket. Now, if he has an abrupt rib coming from one end,
86 as he shows it, to the other, there is no one in the world who would ever use that shovel.

Q. Did you ever see on the market a shovel like that of Surbaugh? A. I have not.

Q. Would you consider it a commercially feasible proposition? A. I would not, either with one or two ribs.

Q. Am I correct in my understanding that you testified that you had never seen prior to this Razor-Back blade a shovel on the market that had a blade of graduated thickness from edge to edge? A. That is right.

Q. It is true that not only had you never seen the Myers shovel on the market but you had never seen one that had a backbone and tapering off to the edges; is that right? A. Yes.

Q. The Myers shovel is what type of shovel as shown in the Myers patent? Do you remember? A. Well, I would call it, as they show it in Figure 5, I believe it is, a strap pattern shovel. I believe it is shown in Figure 5, where they show a cross-section.

Mr. Borst: That is all.

87 Cross Examination

By Mr. Moore:

Q. Just because this Razor-Back shovel and shovels generally are a new line with Union Fork and Hoe Company, that shovel has been aggressively pushed, has it not? A. How was that?

Q. I say, just because shovels are a new line with the Union Fork and Hoe Company, they have been aggressively pushed by salesmen? A. Well, there is no doubt that we have aggressively, you might say, pushed all of our items.

Q. And you have extensively advertised this Razor-Back shovel? A. Along with all of our other tools.

Q. You give it a distinctive dress? A. Yes.

Q. And emphasize that in your advertising? A. We do.

Q. And emphasize it in the promotion of the shovel in hardware stores? A. That is right.

Q. You have a copy of the Myers patent, do you not? A. No, I have not.

Q. I will give you one. Turning to Figure 5, one of the straps shown there could be made of a separate piece
88 of material, could it not? A. Oh, yes.

Q. You would then provide a shovel such as shown in Figure 5? Once that would come from the blank shown in Figure 1? A. That is right.

Q. And another blank would come from outside of that? A. It could be.

Q. And the Myers patent, does, in Figure 2, show the concept of making the shovel blank thicker in the center, tapering toward the edges? A. That is right.

Q. The Razor-Back shovel does have a price advantage over such a shovel as the solid-shank shovel? A. Yes.

Mr. Moore: That is all.

The Court: We will suspend until twenty minutes of 2.

Mr. Borst: I intended to put in evidence that sliced-up exhibit. I can do it right after lunch.

(Thereupon, at 12:40 o'clock p. m., a recess was taken until 1:40 o'clock p. m.)

89 After Recess

(The proceedings were resumed at 1:40 o'clock p. m., at the expiration of the recess.)

Thereupon **Brice B. Sarver**, the witness under examination at the time of recess, was recalled and testified further as follows:

Mr. Borst: Your Honor, I handed up this morning a section blank. I think I will have that marked in evidence.

The Court: You had better indicate what it is marked for, because I have many exhibits now.

Mr. Borst: Pardon me?

The Court: You had better indicate what it is. It is a blank, I assume?

Mr. Borst: It is a section blank. The witness identified these pieces.

The Witness: As a shovel blank cut into sections.

Redirect Examination

By Mr. Borst:

Q. What shovel blank is it? A. The Razor-Back.

Q. Did you yourself have that done? A. That is right.

Mr. Borst: That will be Plaintiffs' Exhibit No. 16.

90 (Article referred to was marked Plaintiffs' Exhibit 16 and was received in evidence.)

By Mr. Borst:

Q. What is this article that I hold in my hand (indicating)? A. That is a complete shovel blank.

Q. That is a Razor-Back? A. Yes.

Q. This is the same as the exhibit just marked in evidence except that it is not in sections? A. That is right.

Mr. Borst: I will have that marked in evidence.

(Article referred to was marked Plaintiffs' Exhibit 17 and was received in evidence.)

By Mr. Borst:

Q. Here are four pieces, Mr. Sarver. Can you tell what these are (handing articles to the witness)? A. This is a completed Razor-Back shovel blade cut into four sections.

Mr. Borst: I will ask that these be marked in evidence.

(Articles referred to were marked Plaintiffs' Exhibit 18 and were received in evidence.)

By the Court:

Q. Could I inquire what the process is from the
91 blank to the completed shovel? A. Your question, please?

Q. The Court is interested in what the mechanical process is from the blank to the shovel. A. From the completed blank to the shovel: We heat the blank. We crimp the socket.

Q. You mean bend it? A. We U that. We turn it down until it is U'd like that (indicating). We turn it over until it is a U. We first shape it. We go through the first shaping dies that roughly shape it and give the blade its rough shape. Then we second shape that, which completes the shaping and turning of the step.

Q. That is this process here (indicating), this one piece? A. That is right. After the second shaping we turn the socket. In other words, we round it from a U shape to round. It is in that form as you see it there now.

By Mr. Borst:

Q. This shaping is done by means of dies, is it? A. Dies and drops, as we do it.

Q. How many steps does that take from the flat blank, which is Exhibit 17, to the finished shovel Exhibit 18? A. Before answering the question, I want to go back. I did not complete the finishing of this blade. After the socket is rounded or turned, as we term it, the top portion of the blade is again heated and the step is rolled by hand
92 with a hammer.

Q. What do you mean by the "step"? A. That is this portion here (indicating).

Q. That won't be intelligible from the record. You mean this turned over back edge? A. That is right. This is what we called the rolled step, to prevent cutting your shoe, the step for your foot.

What was the question you asked, now?

Q. The question is, How many steps are there in converting the flat blank such as Exhibit 17 into the finished shovel which is Exhibit 18 before it is sectioned? A. The heat is one. We crimp the socket, which is two. The first shape is three. The second shape is four. You turn the socket; that is five. We reheat the top of the blade, which is six. We roll the step, which is seven.

Q. Will you tell me how those steps compare with the steps employed in making the standard hollow-back shovel which you say you used to make down in Parkersburg? A. It is made exactly the same as our standard, as we know it, at Parkersburg.

Q. In other words, the steps in making the Razor-Back are no different from making the standard hollow-back; is that right? A. That is right; that is the blade itself, where it is one piece. The reason I say that is that some
93 steps are riveted to the blade.

Q. In the hollow-back? A. Yes; they have been on hollow-backs and on strap and on solid.

Q. We are talking about the one piece. A. That is right.

Q. Those are the same whether they have the thickened center or not? A. That is right.

Mr. Borst: That is all.

Mr. Moore: No further questions.

(The witness was excused.)

Thereupon **Henry M. Myers** was called as a witness for the plaintiffs and, being first duly sworn, was examined and testified as follows:

Direct Examination

Mr. Borst: I should explain to the Court that this witness has been the victim of an automobile accident, which has affected his physical control and his speech, and that will explain perhaps his lack of complete audibility.

Q. What is your name? A. Henry M. Myers.

Q. Mr. Myers, where do you live? A. Beaver Falls, Pa.

94 Q. How old are you? A. 62.

Q. How long have you lived in Beaver Falls? A. All my life. I was born there.

Q. What has been your business? A. Making of shovels.

Q. There is in evidence in this case a patent to H. M. Myers, No. 340,602. Is the Henry M. Myers who is the patentee of that patent any relation to you? A. Grandfather.

Q. What was the business of Henry M. Myers? A. Making shovels; the same.

Q. What was the name of his business? A. The H. M. Myers Company.

Q. Was your father engaged in that business with your grandfather? A. All of his life. Both of them were together.

Q. You say that you were in the shovel business? With what concern were you engaged in the shovel business? A. H. M. Myers Company.

Q. In other words, there were three generations all in the same business; is that right? A. Yes, that is right.

Q. When did you go into that business with your grandfather? A. Well, you have got to figure the years.
95 I am 62 now. I went in there when I was about 18.

The Court: That would put it back to 1897?

The Witness: Just about, your Honor.

By Mr. Borst:

Q. Did you eventually become the head of that business or the manager of it? A. Yes.

Q. What finally became of this Henry M. Myers Company? A. The Ames Shovel & Tool Company of Boston purchased their business and operated it for a good many years. Afterwards they had a reorganization and called it the Ames Baldwin Wyoming. They took in several plants and closed their plant down, and Beaver Falls was one of them.

Q. So the Beaver Falls plant eventually was closed down? A. After the new consolidation, yes.

Q. Were you generally familiar with the shovels that Henry M. Myers made both before and after you went in with them? A. Very. Had to be.

Q. As a small boy did you spend any time around the plant? A. A great deal.

Q. You have seen this patent that I referred to, No. 340,602, have you not? A. Yes.

Q. You are familiar with it? A. Yes.

96 Q. Did Henry M. Myers Company ever make a shovel such as shown in this patent? A. Not to my knowledge.

Mr. Borst: That is all.

Mr. Moore: No cross-examination.

(The witness was excused.)

Thereupon **Edward Durell** was called as a witness for the plaintiffs and, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Borst:

Q. What is your full name? A. Edward Durell.

Q. Mr. Durell, you are in the Union Fork and Hoe Company, are you? A. Yes, sir.

Q. In what capacity? A. At the present time I am president.

Q. The executive offices of that company are where? A. Columbus, Ohio.

Q. What was the business of that company prior to 1936, we will say? A. Manufacturing of hand agricultural implements, such as forks, hoes, and rakes.

97 Q. In size and volume of business how does it compare with other companies in the country in the same line of business? A. We were about second in size.

Q. Your company is the owner of this Finkes application that is involved here, is it not? A. Yes, sir.

Q. When did your company start in the shovel business? A. (After referring to a paper writing) We made some shovels in 1936.

Q. Will you tell in your own way how Mr. Finkes made this invention and what followed from that? A. In 1936 we were making a line of hollow-back shovels of the conventional type in the cheapest grades, used largely for household use, such as small furnace scoops and cheap snow shovels. We had an empty plant at Frankfort, New York, at which these were being made.

They are not a profitable line of shovels to make, because of their low selling price and the very competitive market. We decided that we wanted to make a line of shovels that would be more in line with the general market for shovels—the type of shovels that were used for dirt and gravel.

The conventional hollow-back is of uniform thickness and has several weak points, as have been described here this morning, and we did not want to make that type of shovel.

98 In experimenting in the factory in an effort to overcome those weak points, Mr. Finkes hit upon the idea of making a hollow-back type of shovel from a blank of strip steel which had a thickened center section extending from the top of the socket to the point of the blade. We worked this out on the drawing board and then made some samples by hand. Due to its thin construction and the fact that it has to be kept within a certain weight limit, because a man won't buy a heavy shovel to handle dirt if he can buy a light shovel, we were limited to what we could do in the way of dimension and weight per shovel.

We could not make that section ourselves, because there was no equipment on the market that we could buy and keep busy to afford to own. Therefore, I sent our people who buy steel for us to find out if one of the big rolling mills would undertake the proposition. We looked over the products of the various mills and decided that the American Rolling Mills at Middleton, Ohio, would be the logical people to make this, as they were specialists in hot and cold rolled strip steel.

We tried, by several visits, to interest these people in making this section for us, and they said, due to the fact that it must be made of high carbon steel and must be rolled so thin on the edges and thick in the center, that they would not undertake it.

We next went to Republic Steel Company, which is another company which makes among its products strip steel in large quantities; and they also for the same
99 reasons refused to undertake the problem.

We then went to West Leechburg, and because of the courage of one of their men in the shop, not in the office, they were persuaded to undertake the manufacture of this very difficult section, provided we would put up the money to buy the roll-forming dies that were necessary to make the experiment.

We put up the money, and they finally succeeded in producing this section on a commercial basis. We are still buying that from the same people today. It is the only place in the country that I know of that can make this section.

Q. What is the name of that concern at West Leechburg today? A. It is called the Allegheny Ludlum Company.

Q. You have got your rolled strips for this shovel from them since that time? A. Yes, sir.

Q. What do you call the shovel? A. We call the shovel by the trade name Razor-Back, due to the fact that the razor-back hog, which is familiar to most farming people, has a very prominent backbone that extends from the tail right over his back down to his snout.

Q. You put out literature, do you? A. Yes, sir.

100 Q. Are these two circulars that I show you publications of your company on this Razor-Back (handing documents to the witness)? A. Yes, sir, both are.

Q. Is one of them current? A. Yes, sir. The one marked "New Razor-Back" is current.

Q. And the other one was brought out at a somewhat earlier time? A. This (indicating) is an earlier one; the one with the picture of the razor-back hog is the original one.

Mr. Borst: I would like the original one marked as Plaintiffs' Exhibit 19 and the later one marked in evidence as Plaintiffs' Exhibit 20.

(Documents referred to were marked Plaintiffs' Exhibits 19 and 20, respectively, and were received in evidence.)

By Mr. Borst:

Q. Will you tell with what success your company has met in selling this shovel? A It must be first said that we make only one type of shovel, and that is the hollow-back type of shovel, with this distinction: It has a thickened center section. We do not make the strap back or the solid shank. We do not make any of the variations, which run into the hundreds, that are made by the larger shovel companies. We make only eighteen items, which consist of long, a D handle, in three sizes, and one or two other 101 specialties that fit into that line, making a total of eighteen items; whereas the complete shovel line would probably have 1500 numbers in it.

In spite of that, many of our distributors have found that they can get along with this one Razor-Back shovel and a few specialties that fill the needs. Whereas they formerly carried forty or fifty numbers, now they have reduced their complete lot down to fifteen or twenty numbers.

In spite of that, our sales have steadily increased from the time it was put on the market. When our competitors came out with a close approach to this in the form of what is known to the trade now as the Taper Forged and one as the Taper Rolled, in the fall of 1939, our sales for that year dropped back, but the following year they rebounded and continued upward.

Q. You prepared a statement and gave it to me, did you not, of the sales beginning in 1937 and down to September 12, 1941? A. Down to June 30, 1941, although this statement is dated the 12th. That is the date it was made out.

Q. This is the statement that I have in my hand; is that right (indicating)? A. Yes, sir.

Q. Are you ready to testify that that statement is a correct statement of the sales? A. This statement is in two parts. The first shows the sales by fiscal years, 102 starting with the year 1937-1938, ending with the year 1940-1941. Then follows a tabulation by States in the year 1940-1941.

Roughly, shovels were sold in 45 States, the District of Columbia, Canada, and to the United States Government.

Q. This first statement, showing the total sales in those four years, I take it, is in dozens; is that right? A. All the figures on there are in dozens.

Mr. Borst: I suggest that the reporter just copy this statement in the record. Is there any objection?

Mr. Moore: No objection.

(The document referred to is as follows:)

“September 12, 1941

Razor Back Shovel Sales analysis

Total Sales:

1937-38	26357
1938-39	39039
1939-40	33165
1940-41	37797

1940-41 Sales by State: (by dozens)

Alabama	1001
Arizona	39
Arkansas	279
California	1768
Canada	44
103 Colorado	202
Connecticut	301
Delaware	42
Dist. of Columbia	195
(Government)	1020
Florida	802
Georgia	563
Idaho	——
Illinois	1406
Indiana	456
Iowa	406
Kansas	10
Kentucky	1987
Louisiana	1559
Maine	94
Maryland	1376
Massachusetts	1020
Michigan	440
Minnesota	943
Mississippi	116
Missouri	1588
Montana	74
Nebraska	60
Nevada	——
New Jersey	317

	New Mexico	91	
104	New York	3693	
	North Carolina	969	
	North Dakota	109	
	Ohio	2897	
	Oklahoma	282	
	Oregon	436	
	Pennsylvania	2006	
	Rhode Island	354	
	South Carolina	457	
	South Dakota	80	
	Tennessee	1524	
	Texas	1364	
	Utah	258	
	Vermont	1	
	Virginia	1925	
	Washington	620	
	West Virginia	491	
	Wisconsin	575	
	Wyoming	——	
		36240	Total
	Export	1557	
		37797	Grand Total”

By Mr. Borst:

Q. You spoke of your competitors. Will you tell
105 me what your experience has been with regard to
competition? A. Well, every manufacturer has distributors scattered throughout the United States, and those distributors sell to the retail hardware trade; and, naturally, our distributors are competing for the hardware dealers' retailers' business in competition with the salesmen of competing manufacturers. They had well established distributors, and when they came out with their competitors' shovels, they naturally were able to sell a good quantity.

The first year of a new article, if it is backed by a responsible house, meets with ready acceptance; and that cut into our sales quite heavily. Next year our sales bounced right back, and this year will be the greatest since we started five years ago.

Q. You speak of your competitors. What were the names of their products? A. The names of their products were these: For the American Fork & Hoe Company it was the Taper Forged shovel, and the product of the Ames Baldwin Wyoming Company was the Taper Rolled.

Q. What is the comparative price at which those sell? A. The same competitive prices.

Q. In other words, those are right in the class with your shovel? A. In the same price bracket; yes, sir.

106 Q. Both cheaper, however, than solid shank shovels? A. Yes, sir.

Q. What has been your experience and observation as to the durability of this Razor-Back shovel as compared with the solid-shank shovel? A. The solid-shank shovel and the conventional hollow-back and the strap-back shovel have a uniform thickness at the point. They will all wear about the same, provided they are of the same gauge and the same chemical content.

If you put those shovels up against the Razor-Back, you will find in wear tests that they all wear back about the same, while the Razor-Back wears back and keeps its point. That is the main difference in the wearing qualities, on the point.

The strap back, the conventional hollow back, and the solid shank wear back moon-shaped and soon have two points instead of one, which makes it very difficult to enter into the soil; while the Razor-Back, being thick at the point and tapering to the sides, seems to take the wear evenly and retain its point, even though it wears back.

Q. In the circular that we put in evidence, which I think was marked "Plaintiffs' Exhibit 19," there is shown a picture of a man stepping on the blade of the shovel and bending it, flexing it. Do you see that (handing a document to the witness)? A. Yes.

Q. Is that a desirable property? A. Well, it is a

107 test that the trade has learned to use for many

years to test the springiness of the shovel blade to tell whether it is well tempered or whether it is soft.

Q. Should it have springiness, then? A. Yes.

Q. Suppose you were to put a rib right down the middle so as to take out that springiness and make it a rigid body. Would that be desirable or undesirable? A. It would be undesirable.

Q. Had you, prior to your entering upon the manufacturing of this Razor-Back shovel, ever known of a shovel on the market which had this graduated thickness from the center to the edge? A. No, sir.

By the Court:

Q. When you speak about the wearing quality of the shovel, particularly the shovel in evidence, how about a square-point shovel? A. It is not as noticeable, sir, in the square point as in the round point. The square-point shovel is used largely for transfer purposes. It is not used for digging, because it requires too much force to force it in the soil, because it has no point. It is used largely for the transfer of material from the floor to a wheelbarrow or from the floor to a mixing machine, or something of that kind.

Q. But in a certain period of time won't you get

108 this concavity? A. The wear on a square point will

usually show up at a different place than that, due to the fact that it is slid along the floor or the ground. The wear comes right here (indicating), and that is where they break before they wear the point very much, because they are resting on a cement floor or the bottom of a gravel pit or something like that, when they are used for transfer purposes, and that is where the Razor-Back is exceptionally stronger at the wear point, because it is thick in there and will not wear through as rapidly as one of even thickness.

Mr. Borst: That is all the direct.

Cross Examination

By Mr. Moore:

Q. Mr. Durell, the Union Fork and Hoe Company had national distribution on other products before it came on the market with this Razor-Back shovel in 1936? A. Yes, sir.

Q. It had national distribution of its products for years, did it not? A. Yes, sir.

Q. Both of these circulars show the razor-back principle applied both to a pointed shovel and to a square shovel, do they not? A. Yes, sir.

109 Mr. Moore: That is all.

(The witness was excused.)

Mr. Borst: Before closing the case, I will offer a certified copy of Canadian Patent 399,891, issued to George M. Finkes, Assignor, on the 7th day of October, 1941, the reason for offering it being that it is the counterpart of the application that we are seeking here with the same plans.

The Court: In other words, the Canadian Patent Office has granted the patent?

Mr. Borst: The Canadian Patent Office has granted the patent.

The Court: Do you object to it?

Mr. Moore: No.

Mr. Borst: We offer it for whatever weight it may have.

(Document referred to was marked Plaintiffs' Exhibit 21 and was received in evidence.)

Mr. Borst: That is the plaintiffs' case.

Mr. Moore: The defendant's case consists of the exhibit entirely.

The Court: You are resting on the Primary Examiner's report, the Board of Appeals report, and such cross-examination as has been made?

Mr. Moore: Yes, together with the references cited.

The Court: Would you care to argue it?

110 Closing Argument on Behalf of Plaintiffs by Mr. Victor D. Borst.

Mr. Borst: I think the issues have been brought out quite clearly—at least, I hope they have—in the testimony.

It would be well to refer to the decision of the Board of Appeals and perhaps to use that as the springboard from which to discuss the evidence which we have introduced. The Board of Appeals, after quoting one of the claims, Claim 1, and stating the basis of the rejection, said that the claims have been held unpatentable over the patents of Lowman and Surbaugh.

I think your Honor can visualize those clearly in mind. Lowman is the old type of uniform thickness, the original patent on the hollow-back shovel. Surbaugh is the one which I think has been entirely misconstrued by the Patent Office tribunals, the one that has just the rib going down the center. In modified structure, they show two ribs. I did not go into that. It is quite obvious that if you were to attempt to get that and shape it around to a socket, you would have to bend those ribs. Instead of having them come up the middle, they would have to be flexed laterally, and it would be little less than absurd to propose such a thing as that.

We are discussing the other one, however, the one with a single rib down through the center. That is, he says, is to give rigidity. Let us get the precise language. Mr. Moore referred to the statement in the first column 111 of the patent, beginning at line 16:

"A further object of the invention consists in the provision of certain means for reinforcing the weak portions of the shovel."

Now, we go on farther to find out what he mean by reinforcement. He says, down at the bottom of that column, that he provides a rib 12, thereby adding rigidity and strength to the sheet.

Over on the next column, at line 73, he refers to the fact that there is a point at which they are apt to break on a transverse line, he says, which intersects the point where the frog merges with the blade. He says that will crystallize.

Of course, the only thing that makes it crystallize is continual movement, and so he is going to prevent continual movement, flexing along that line, by putting a stiffening rib down through that and holding that rigid. It is as though one were to put a broomstick down the back of one's collar. He could not bend his back. And so you could not bend that shovel any more. That is what Surbaugh was after.

It seems to me that the proposterousness of that construction is apparent upon its face. I had some little surprise, really, in talking with the Examiner in the Patent Office, in learning that he adhered to the position that that was a patent comparable to the thing that we were trying to patent, and he did it, and the Board followed him.

112 The Board said:

"Each of these patents discloses a shovel of the hollow-back type, having the claimed shape in respects other than cross-section. Lowman shows cross-sections of uniform thickness. He states that although he prefers" — and so on — "nevertheless it will be obvious . . . the blanks may be rolled of unequal thickness."

Then, going down to the last complete paragraph on that page, the Board says:

"The patent to Surbaugh which also discloses a shovel of the hollow-back type has a thickened central portion extending throughout its length."

Of course, that is true. It has a thickened central portion in the form of a rib. But what the Board does not state is that it is not tapered from that rib down to the edges, as each of the claims in suit requires. So I feel that your Honor will not be impressed too much with that Surbaugh patent.

We have the other basis upon which we have met rejection so far, and that is that Lowman talked about strengthening a shovel blade in the places where it needs strengthening, and that Myers taught where it would need strengthening. I think that is a fair statement of my opponent's position.

Now, to meet that, let us consider what the testimony is. First, you will recall the testimony of Mr. Jones that it
would be impossible to roll a sheet of metal which
113 would have uneven thickness in it. It would have
to be of the same thickness, because it is put in in the two axes, first one way and then turned 90 degrees and put in the other way.

Furthermore, that is a statement about which the courts have spoken so many times that I think I need not cite to your Honor decisions to the effect that the mere suggestion in a patent that never came into commercial fruition is not enough to deprive a later contributor of the rewards which the patent laws entitle him to.

A suggestion back in 1873 that this cross-section might be of variable thickness so as to strengthen it where it was needed had nothing come out of that. It still was left for Mr. Finkes, going through the travail which we have learned about in this court, to produce the thing and to give it to the commercial world.

If there is anything in the patent law, it is certainly that the man who takes the last step and gives to the industrial trade that thing which they have been seeking is the one who is entitled to the patent. It is a perfectly logical thing. It has gotten so that one can go back into the patent art and find hints and suggestions which today would deprive practically every applicant for a patent, if this doctrine which is here enunciated and applied were carried out to its logical conclusion.

What do we have? We have a statement of a man
114 back in 1873 that on its face, disassociated from
present-day knowledge, means nothing. And we have a figment of the imagination, in Beaver Falls, Pennsylvania, that in a strap shovel there is a cross-section illustrated which, when looked at in the abstract, looks like

ours. It is a strap shovel. The problems are different. There was not any question there of reinforcing a frog.

Read the Myers patent. He talks about reinforcing his straps, and yet he does not tell you how in the world he is going to get reinforced straps. Not only that; he never produced the shovel. It never was produced. It stands there as an empty prophecy, perhaps, in the Patent Office, and nothing more.

In spite of the fact that those two patents exist, what do we find? We find that when the art really wanted to provide the trade with a shovel that was better than the conventional hollow-back shovel, Mr. Skelton produces his solid shank. That is the best shovel that the trade had known up to that time, and let me say this definitely: It was the best shovel that the trade knew until Mr. Finkes brought out his shovel. The evidence is certainly sure that Mr. Finkes' shovel, though produced as cheaply as the conventional hollow-back shovel, is durable—yes, more durable than the solid-shank shovel, costing much less. Has he contributed something? Yes.

Some years later a man by the name of Milligan,
115 realizing the weaknesses of the conventional hollow-
back shovel, did what? He took out a patent, and that is in evidence. It lay dormant for years. It was still a forged proposition. It still was in the cost class of the solid-shank shovel.

He proposes, by forging, to provide an extra thickness around the frog, and then the rest of it would be the usual gauge metal. He got a patent for that. I say it lay dormant, and it did. It lay dormant from 1933, when the patent came out—it was applied for in 1931—until 1939, when the owners of that, the American Fork & Hoe Company, being stung by the competition of this shovel, pulled that out from their files and put it into production. It is the nearest approach that the American Fork & Hoe Company has made to an imitation of our shovel.

I submit that the fact that they have first paid ours the compliment of imitation, but have respected the Finkes contribution as an original one and hence refrained from taking it literally—I say that is as strong evidence as the Court would want of what the trade thinks about this.

Not only the American Fork and Hoe Company did that, but down in Parkersburg the Ames Baldwin Wyoming Company have done the same thing. After the Taper Forged shovel comes out, then the Ames Baldwin Wyoming Company follows with a close imitation, known as the Taper Rolled shovel, each of them, however, avoiding a complete imitation of the Finkes invention and paying it that respect.

116 Those, I submit, are indicia of invention here.

We have evidence as to the commercial acceptation.

True, those weigh in favor of patentability only in case of doubt, and if it be true that your Honor entertains no doubt, then the evidence regarding sales, the evidence regarding the attitude of our competitors, the evidence of what the Canadian Patent Office did, are not of any moment in the case. But if your Honor does have some question in your mind as to whether or not this was a patentable contribution, then I say that these elements help to resolve that doubt in favor of the prayer of our complaint. I thank you.

Closing Argument on Behalf of Defendant by Mr. Clarence W. Moore.

Mr. Moore: If your Honor please, there is very little really new evidence in this case. The commercial success of the Razor-Back shovel was proved by affidavits in the prosecution of this case before the Primary Examiner. The Primary Examiner conceded that the Razor-Back shovel had enjoyed unusual commercial success. He also admitted that it was a superior shovel. But an invention has to embody more than commercial success and superiority over the shovels known in the art. There must be an invention involved. After all, the Union Fork and Hoe Company is asking for a monoply for seventeen years upon the alleged advance they have made in the art.

As to the jurisdiction of this court, or course the
117 plaintiff is under the burden of proving that the
Patent Office was wrong in refusing him a patent.
That is the doctrine of *Abbott* v. *Coe.*

Something has been said here of the lack of the knowledge of the art with respect to this Myers patent. Of course, the inventor, working in the art, is conclusively presumed to know what has gone on before. It is immaterial whether the shovel has ever been made or commercialized, because the Patent Office relies upon the references that are in the Office and not upon whether the device has gone into commercial use.

The Supreme Court has, in *Hildredth* v. *Mastoras,* 257 U. S., page 27, held that it is not necessary to show that a device is a commercial success to render it valid anticipation.

As Justice Miller pointed out in the recent decision of the U. S. Court of Appeals for the District of Columbia, a pioneer device very often does not enjoy commercial success. The cream of the market is reaped by the man who comes along maybe several generations after the patent has been on the market and, by reason of the condition of the market, reaps the monetary benefit that might well have belonged to the pioneer. I refer to *Morrison* v. *Coe,* which was decided October 16, 1941.

Much has been said here of the difficulty of rolling the shovel as set forth in the Lowman patent, but I submit a discussion on that matter is based on a quibble of the
meaning of the words "sheet metal." After all,
118 when this problem of rolling a shovel blank with
a large cross-section of the center tapering toward
the end was brought to the rolling mill of Mr. Jones, he was, in view of his experience, enabled to roll that blank.

It is not alleged here that there was any invention in that process of rolling that blank.

Furthermore, the subject matter of this suit is not the process. It is the shovel itself.

It is immaterial, therefore, whether the Lowman patent or any other patents disclose a process for rolling the blank. I might cite in connection with that the decision of the old D. C. Court of Appeals, *In re Decker,* which is reported at 36 Appeals D. C. 104.

You might turn to the Lowman patent and note that on page 2 the patent says that "the blanks may be rolled of unequal thickness." He is at least specific to that extent. He is even more specific in saying that it shall be "thickest in the parts which in the article, when made, will be exposed to the greatest strain."

Now, as to this matter of making the central zone thicker than the edges, tapering the shovel toward the edges, I submit that Figure 2 of Myers shows such a construction, and that, as the Board stated, it would not be any invention to use such a construction in the hollow-back type of shovel.

119 We feel that the Board of Appeals was correct in affirming the decision of the Examiner and that the decisions of the Examiner and the Board of Appeals contain a complete refutation of the argument made here.

Mr. Borst: I would like your Honor not to fail to note the difference between Claims 2 and 3 and the other claims, Claims 2 and 3 being limited to the precise cross-section—that is, of uniform thickness for a definite width down the middle and then tapering off to the sides. That is something specifically not shown in the prior art. It is a decided advantage. It is the precise way of making it.

I think, whatever your Honor may think about the broad claims, those at least should be accorded a patent.

The Court: I will take this case under advisement.

Mr. Borst: Would you like any briefs, your Honor?

The Court: I do not think they will be necessary.

Mr. Borst: The record of the testimony will be written up. Would your Honor like to have a copy of it?

The Court: I would like to have a record of the testimony, if it is not too much of a burden on the parties.

(Thereupon, at 2:45 o'clock p. m., the instant hearing was concluded.)

* * * * * * * * *

DEFENDANT'S EXHIBIT NO. 1.

268 Endorsed: Filed Mar 23 1942 Charles E. Stewart, Clerk

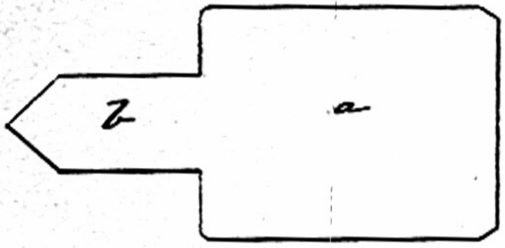
George M. Finkes and The Union Fork and Hoe Company v. Coe—Civil Action No. 7728.

A—Lowman,	142,859
B—Myers,	340,602
C—Surbaugh,	1,083,952
D—Hassel, French,	19,349
E—Print of Drawings,	
F—Statement of the Primary Examiner,	
G—Decision of the Board of Appeals.	

H. L. LOWMAN.
Manufacture of Shovels, &c.

No. 142,859. Patented September 16, 1873.

FIG. 1



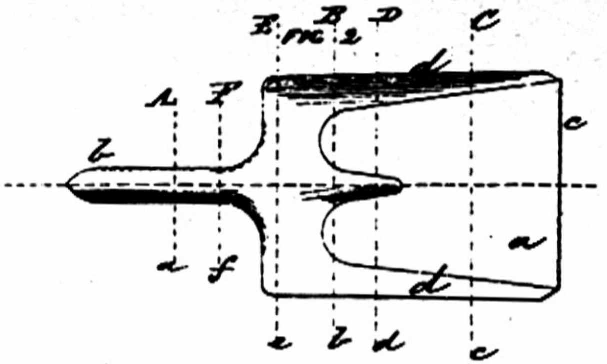


FIG 3. A a.

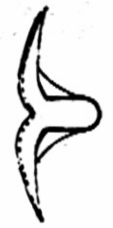


FIG. 4. B. b.

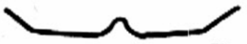


FIG: 7. C, c.

FIG: 5.

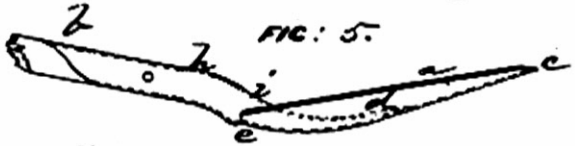


FIG 8. D, d.

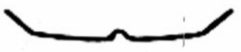


FIG: 6.

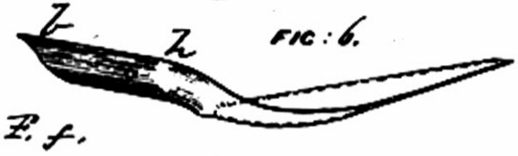


FIG 9. E. e.

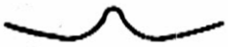


FIG: 10. F. f.

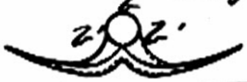


FIG: 14

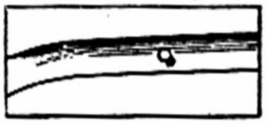


FIG: 13.

FIG: 11

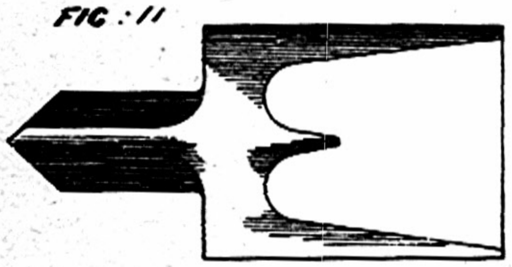


FIG: 15.

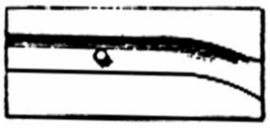


FIG: 16

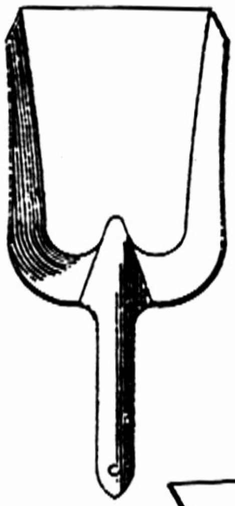


FIG: 17

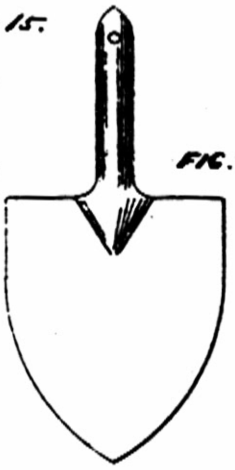


FIG: 12.

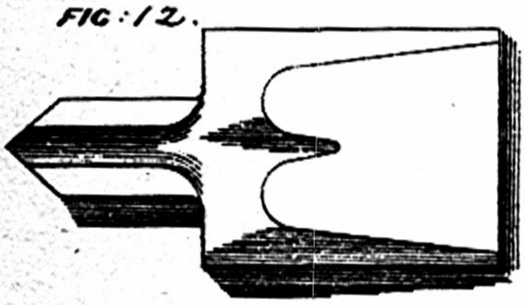
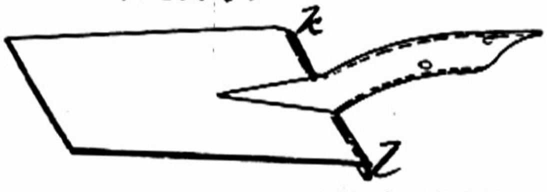


FIG: 18.



WITNESSES:

W H Pickler

William Scott.

INVENTOR.

H. L. Lowman

UNITED STATES PATENT OFFICE.

HARVEY L. LOWMAN, OF BIRMINGHAM, CONNECTICUT.

IMPROVEMENT IN THE MANUFACTURE OF SHOVELS, &c.

Specification forming part of Letters Patent No. **142,859**, dated September 16, 1873; application filed July 24, 1873.

To all whom it may concern:

Be it known that I, HARVEY LESTER LOWMAN, of Birmingham, in the State of Connecticut, have invented an Improved Process of Manufacturing Shovels, Spades, Grocers' Scoops, and other like articles, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 represents the blank for a shovel cut out of a sheet of metal of the required thickness; Fig. 2, a face view of the blank after it has undergone the first swaging operation; and Figs. 3 and 4, cross-sections of the same taken at the lines A *a* and B *b* of Fig. 2. Fig. 5 is an edge view of the completed shovel; Fig. 6, a longitudinal section; and Figs. 7, 8, 9, and 10 cross-sections, taken severally at the lines C *c*, D *d*, E *e*, and F *f*, Fig. 2; Figs. 11 and 12, the dies for the first swaging operation; Fig. 13, the mandrel on which the shank is finished; and Figs. 14 and 15, the dies for finishing the shank. Figs. 16 and 17 are other forms of shovels; Fig. 18, a spade.

The same letters indicate like parts in the several figures.

My said invention relates to the process of manufacturing shovels, spades, grocers' scoops, and other analogous articles, blade and shank, of one piece of sheet metal; and consists in cutting the blank for the blade and shank of one piece of sheet metal, and by two successive swaging operations bending the sheet metal into the form required for the blade, and a hollow shank to receive the wooden handle.

The blank is cut with shears or cutters from sheet metal of the required thickness for the intended shovel, spade, or scoop, as the thickness is not materially reduced by the after operations of swaging. The form of the blank will depend upon the form of the blade of the shovel or other article desired to be produced. If for a shovel, such as represented by Fig. 5 of the accompanying drawings, the blank should be cut of the form represented by Fig. 1, the part *a* being for the blade, and the part *b* for the shank to receive the wooden handle. The blank thus cut out is then subjected to the first swaging operation between two dies or swages, Fig. 11, having its face of the form of the front face of the blade and shank of the shovel when completed, and Fig. 12 having its face of a form the reverse of the face of Fig. 11 less the thickness of the blank after having been so swaged. The form of the blank, after the first swaging operation, is represented by Figs. 2, 3, and 4, and the form of the blade *a* is completed, as also the upper or front portion of the shank *b*, by this first swaging operation. The shank or socket is afterward completed by a second swaging operation. The part, *b*, that is the half-formed shank or socket is put upon a mandrel, Fig. 13, and while it is so held it is subjected to the swaging or bending operation of two dies, Figs. 14 and 15, by which the two edges b' b' of the part *b* of the blank are bent around the mandrel until the two edges meet, or nearly so, which completes the form of the shank or socket. When so completed the blade of the shovel will be of the form represented by Figs. 2 and 5, with the front edge *c* straight, and the sides *d d* and back edge *e* slightly curved to give the required concavity to the front or working face, while the shank *b* is tubular for a part of its length to form a socket, into which the handle is to be driven, and, if desired, secured by one or more rivets. The shank or socket is circular in its cross-section, as seen at Fig. 10, and straight, or nearly so, in the direction of its length from its extreme end to the point *h* within a short distance of the back edge *e* of the blade. In the direction of the length it extends in a convex ridge from *h* to *i*, and from *i* in a concave ridge, vanishing into the face of the blade; and, laterally, the edges which meet or nearly meet to form the tubular part of the shank by gradual curves run into the back edge of the blade, the sheet metal being bent each way from the central line, spreading laterally in curved planes, as represented in the cross-sections, Figs. 7, 8, and 9. The general form produced by the bending of the sheet metal at the junction of the blade with the socket part of the shank is such as to present arches longitudinally and transversely, giving a greater amount of strength for the weight of metal than can be obtained by any other mode of construction known.

Figs. 16 and 17 represent other shovels, which differ only in the form of the blade.

Fig. 18 represents a spade made in the same manner, except that the back edge *k* of the blade is formed by turning the back edge *l* at right angles, to form the required flat surface for the bearings of the foot. This result is produced by cutting the blank a little longer than the blade of the intended spade, and forming one of the dies for the first swaging operation a little longer than the other and with a flange.

I prefer to heat the metal for the swaging operations; and, although I prefer to use sheet metal of one equal thickness, nevertheless it will be obvious that the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the article, when made, will be exposed to the greatest strain.

It will be obvious from the foregoing that the form of the shovels, scoops, spades, or other like instruments may be varied so long as they are made with the blade and shank of one piece of sheet metal, substantially as described.

What I claim as my invention is—

The combined process, substantially such as described, for making shovels, spades, scoops, or other analogous articles in one piece from sheet metal, by cutting the sheet for the body of the shovel and with a projection from the rear edge thereof, which is to form the hollow shank, and at one swaging operation between dies giving the form required for the shovels and the half form to the projecting part which is to form the projecting hollow socket, and then by the second swaging operation completing the hollow tubular projecting socket for the reception of the handle, substantially as and for the purpose specified.

H. L. LOWMAN.

Witnesses:
Wm. H. Bishop,
William Scott.

(No Model.)

2 Sheets—Sheet 1.

H. M. MYERS.

SHOVEL.

No. 340,602.

Patented Apr. 27, 1886.

Fig.1.

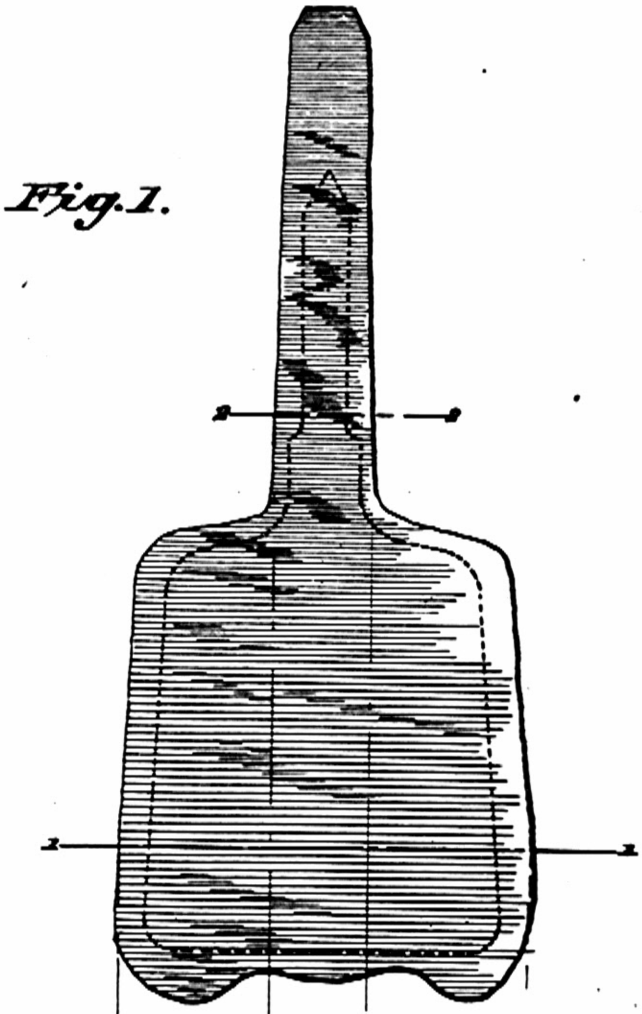


Fig.2.

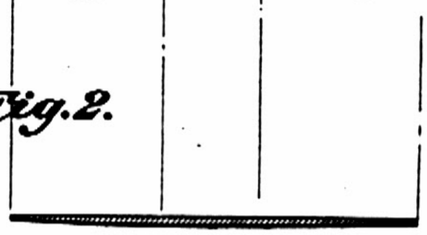
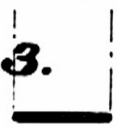


Fig.3.



WITNESSES:

Fred. G. Dieterich.

A. J. Johnston.

INVENTOR.

Henry M. Myers

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

H. M. MYERS.

SHOVEL.

No. 340,602. Patented Apr. 27, 1886.

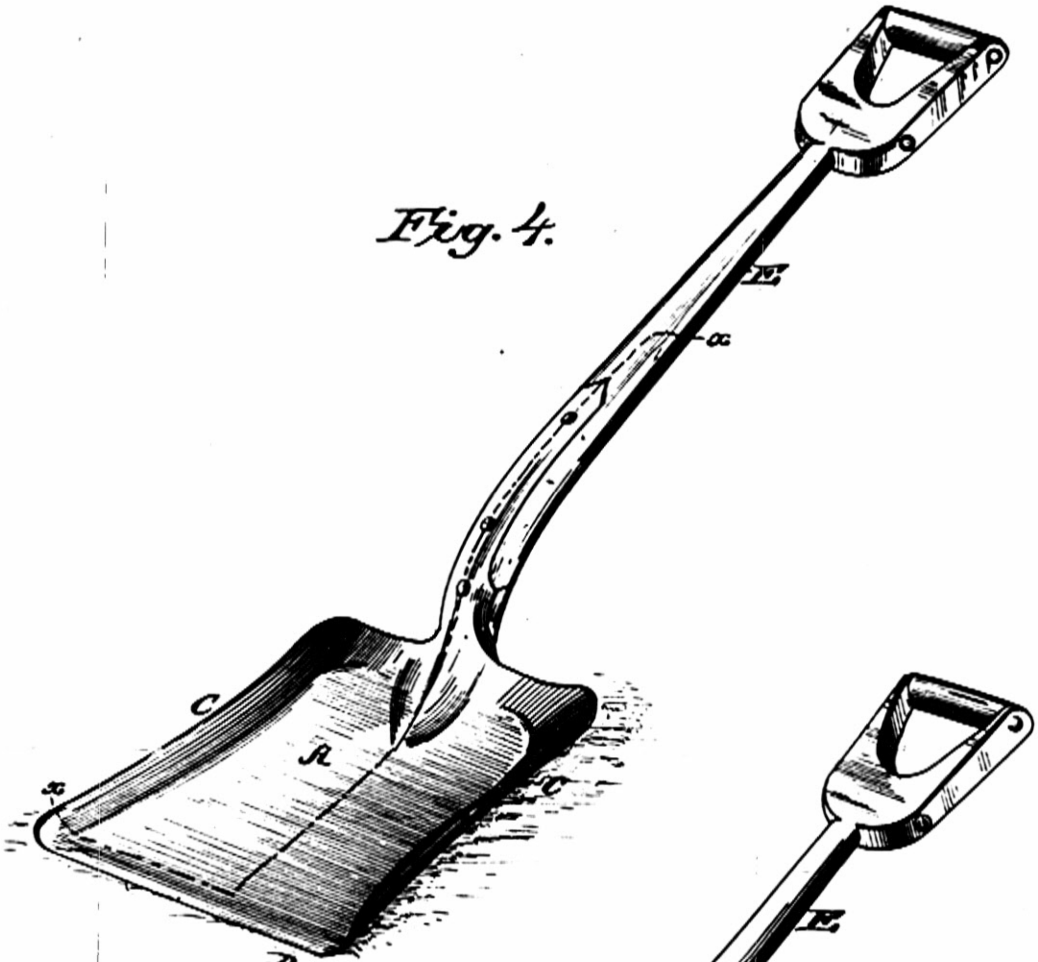


Fig. 4.

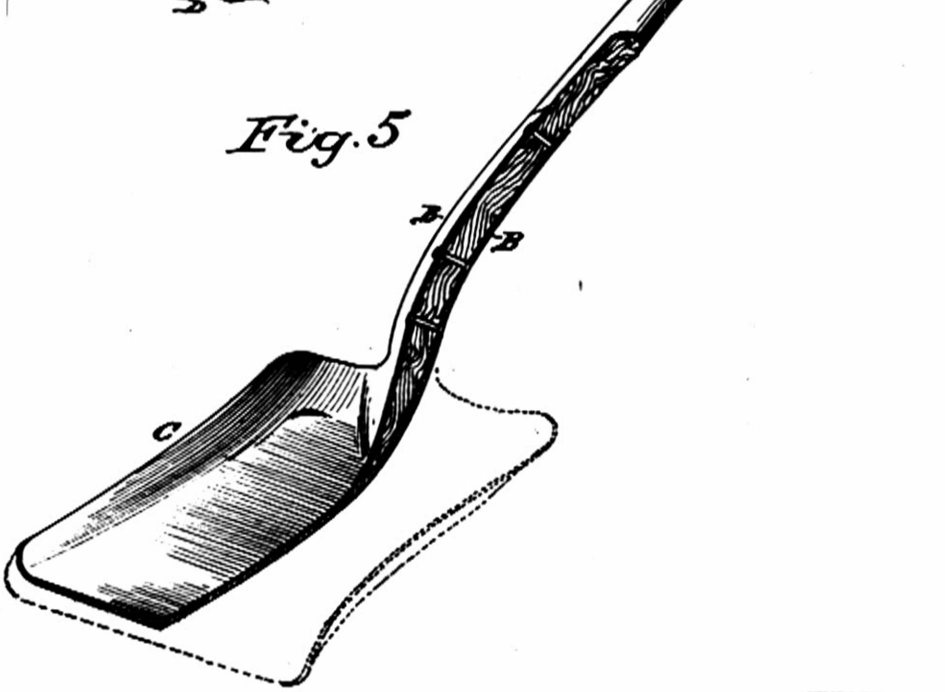


Fig. 5

WITNESSES:

Fred. G. Dieterich.

H. J. Johnston.

INVENTOR.

Henry M. Myers

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY M. MYERS, OF BEAVER FALLS, PENNSYLVANIA.

SHOVEL.

SPECIFICATION forming part of Letters Patent No. 340,602, dated April 27, 1886.

Application filed February 10, 1885. Renewed October 22, 1885. Serial No. 180,633. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. MYERS, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented a certain new and useful Improvement in Shovels, the same being a new article of manufacture; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in a new article of manufacture—to wit, a shovel having lengthwise of the blade and of the straps for receiving the wooden handle a determined thickness, which gradually diminishes toward the side edges of said blade and straps, whereby the uneven wear of the shovel-blade is compensated for and greater strength is obtained for the handle-straps, as will hereinafter more fully and at large appear.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, I will proceed to describe its construction and operation.

In the accompanying drawings, which form a part of this specification, Figure 1 is a top view or plan of a shovel-blank partially formed. Figs. 2 and 3 are transverse sections of the same at lines 1 and 2 of Fig. 1. Fig. 4 is a perspective view of the shovel, representing it when finished. Fig. 5 is a longitudinal section, in perspective, at line 3 in Fig. 4.

In making my new article of manufacture I use any of the known forms of blanks for shovels adapted to be plated or rolled, which blanks are plated or rolled in such manner that the shovel-blade A is of a determined thickness lengthwise of the blade and of the handle-straps B B, and gradually diminishing in thickness from the center of the edges C C of said blade and straps, as shown in Figs. 2 and 3. The blank thus made is then cut, swaged, and finished in the manner known to the art.

The essential feature of my new article of manufacture consists in making the shovel-blade thick at its center and throughout its length, and diminishing in thickness toward each edge C C, as shown in Fig. 2, in contradistinction to the blade being of uniform thickness, and in contradistinction to the blade being thick at its upper edge and gradually diminishing in thickness to its point.

The advantage of my new article of manufacture consists in uniformity of wear of the entering end of the shovel-blade, and imparting strength to the blade and handle-straps at the place subjected to the greatest strain and wear, and accomplishing the same with a minimum of metal and maximum of weight. The greatest wear of the shovel-blade is always at the center of the entering end of the blade; hence it wears away, as indicated by the dotted line D in Fig. 4, which wearing away in the shovel-blade is very objectionable, it being often impossible to shovel to a straight line, or cut down to a straight line, in the operation of digging and shoveling when the entering end of the blade is worn away, as indicated in Fig. 4 by the dotted line D. The greatest strain on the shovel-blade, and also on the straps, is always at, along, and on the longitudinal center line of the blade and straps; hence it will be apparent that the greatest thickness of metal should be at that part of the blade and straps.

By making the handle-straps as hereinbefore described sufficient metal is obtained for the reception of the rivet-heads, as shown in Fig. 5, whereby the wooden handle E may be secured in place without the unsightly indentations in the handle-straps caused by the drawing action of the rivets, and a smooth evenly-finished handle is obtained, having increased strength and durability, with handsome finish.

Having thus described my improvement, what I claim as of my invention is—

1. As a new article of manufacture, a shovel, the blade A and handle-straps B B of greatest thickness at the center throughout the length thereof, and gradually diminishing in thickness toward the side edges, C C, substantially as herein described, and for the purpose set forth.

2. As a new article of manufacture, a shovel, the blade A of greatest thickness at the center throughout the length thereof, and gradually diminishing in thickness toward the side edges, C C, substantially as herein described, and for the purpose set forth.

HENRY M. MYERS.

Witnesses:
JONATHAN GHRIEST,
WINFIELD S. MOORE.

J. S. SURBAUGH.
SHOVEL, SPADE, AND SCOOP.
APPLICATION FILED FEB. 24, 1913.

1,083,952. Patented Jan. 13, 1914.

Fig. 1.

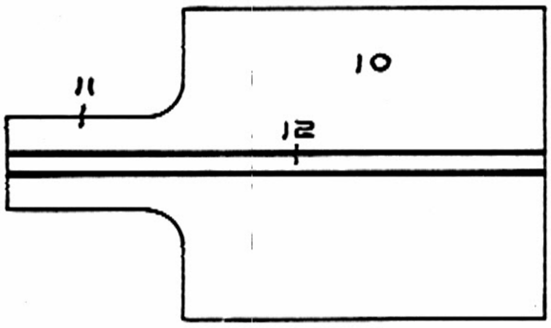


Fig. 2.

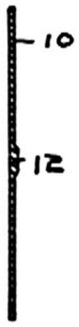


Fig. 4.

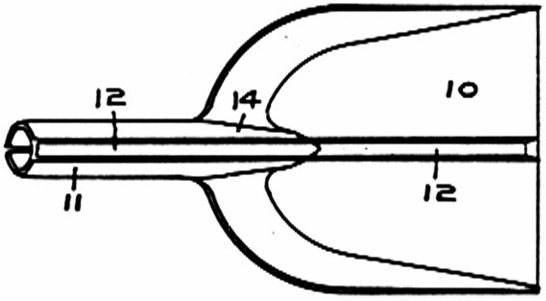


Fig. 3.

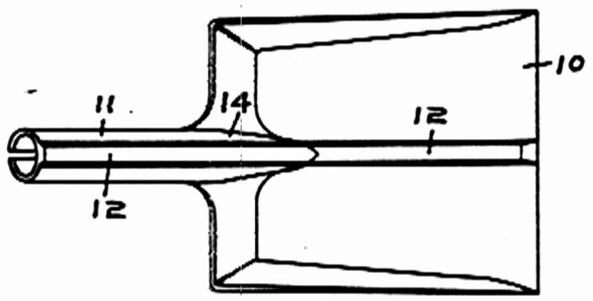


Fig. 5.

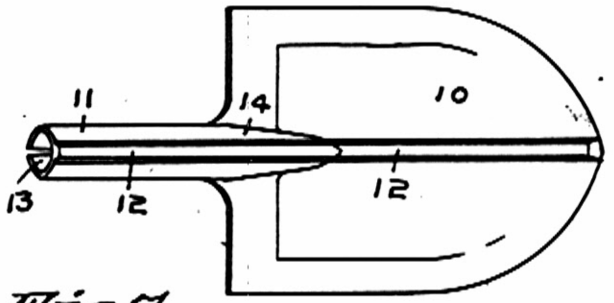


Fig. 7.

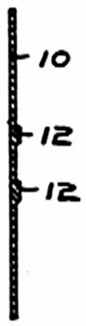
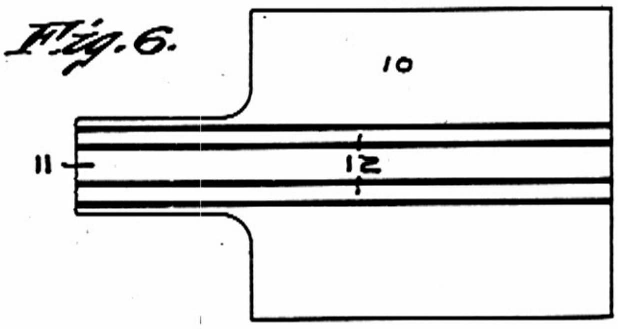


Fig. 6.



WITNESSES:
L. B. Woerner.
J. L. Larson.

INVENTOR
John S. Surbaugh,
By Minturn & Woerner,
ATTORNEYS.

J. S. SURBAUGH.

SHOVEL, SPADE, AND SCOOP.

APPLICATION FILED FEB. 24, 1913.

1,083,952. Patented Jan. 13, 1914.

Fig. 1.

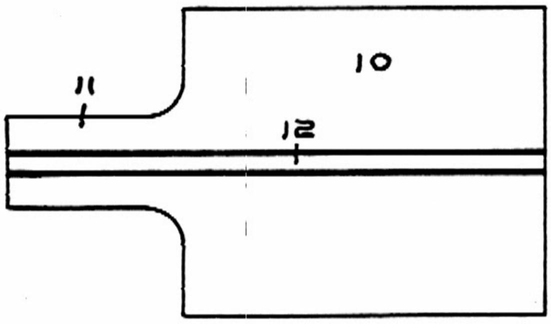


Fig. 2.

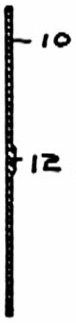


Fig. 4.

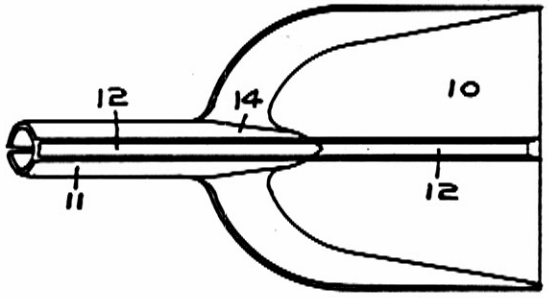


Fig. 3.

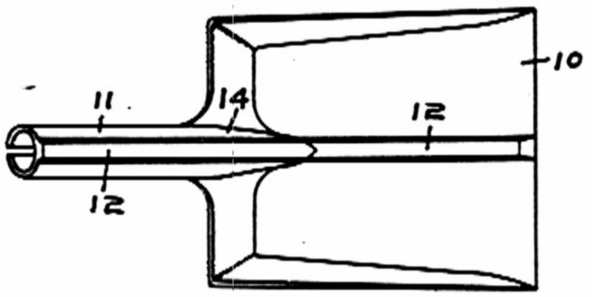


Fig. 5.

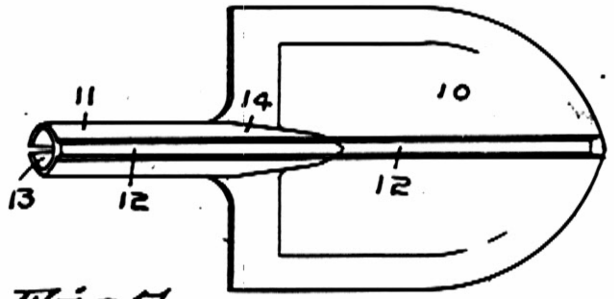


Fig. 7.

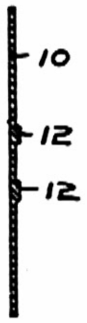
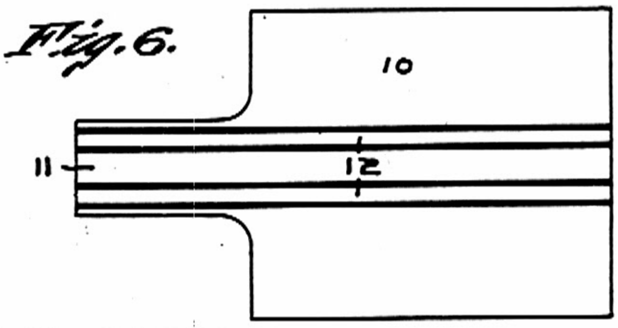


Fig. 6.



WITNESSES:

L. B. Woerner.

J. L. Larson.

INVENTOR

John S. Surbaugh,

By Mintum & Woerner,

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN S. SURBAUGH, OF VINCENNES, INDIANA.

SHOVEL, SPADE, AND SCOOP.

1,083,952. Specification of Letters Patent. **Patented Jan. 13, 1914.**

Application filed February 24, 1913. Serial No. 750,440.

To all whom it may concern:

Be it known that I, JOHN S. SURBAUGH, a citizen of the United States, residing at Vincennes, in the county of Knox and State of Indiana, have invented certain new and useful Improvements in Shovels, Spades, and Scoops, of which the following is a specification.

This invention relates to shovels, spades and scoops; and the object of the invention consists in the provision of shovels, spades and scoops of the above character which will be simple in construction, light in weight, strong, durable and cheap to manufacture.

A further object of the invention consists in the provision of certain means for reinforcing the weak portions of the shovel, spade and scoop blades as, for instance, at the point of the blade and at the end of the frog.

I accomplish the above objects of the invention by means of the construction illustrated in the accompanying drawings, forming a part hereof, in which—

Figure 1 is a top or plan view of a blank adapted to form the shovel, spade or scoop, the outer contour of the blank depending on the shape of the die so that the desired class or character of the tool can be produced. Fig. 2 is a cross section of the construction shown in Fig. 1. Fig. 3 is a top or plan view of a completed shovel blade crimped out of the blank shown in Fig. 1. Fig. 4 is a completed blade forming a scoop. Fig. 5 is a completed blade forming a spade. Fig. 6 is a top or plan view of a modified form of blank which can be used in place of the one illustrated in Fig. 1. Fig. 7 is a cross section of the construction shown in Fig. 6.

Referring to the drawings, 10 represents a blank which is cut from the main body of the sheet metal by means of a suitable die in the usual and well known manner, and this blank terminates in a shank member 11. The blank 10 is placed in a machine for crimping it into the desired article, namely, to form a shovel, spade or scoop blade. The blank 10 consists of a thin piece of sheet steel of a character commonly used in making the class of tools above noted, the stock being rolled to provide a rib 12 whereby the metal is left more thick and thereby adding rigidity and strength to the sheet. The blank 10 is cut from the stock so that the rib 12 will extend longitudinally through the center of the blank 10 and the shank member 11. After the blank 10 has been crimped into a blade the shank member 11 is bent to form a hollow sleeve which provides a socket 13 for the reception of the well known wood handle generally employed in connection with these tools. Fig. 3 clearly shows the reinforcing rib occupying the desired position after the shovel blade and the shank member 11 have been crimped and properly formed. By means of this construction it will be noted that the rib 12 adds rigidity and strength to the entire blade and also reinforces the weakest point of the blade where the frog 14 merges with said blade. When spades and scoops are manufactured from thin sheet metal the metal is apt to break under great stress on a transverse line which intersects the point where the frog merges with the blade. In time the metal along the above noted line will crystallize, causing the blade to break, this being particularly true where a light shovel is employed in doing heavy work. By using the reinforcing blade 12 in light shovels it so strengthens the blades that a shovel of comparatively light character can be used in doing exceptionally heavy work. From the fact that the rib 12 extends out to the cutting edge of the shovel blade it so strengthens said edge that the shovel can, in many instances, be employed as a pry. This being particularly desirable in loosening and removing boulders, rocks and similar obstructions.

In Figs. 6 and 7 of the drawings, I have illustrated a modified construction wherein the blank from which the shovel blade is formed is provided with a plurality of the ribs 12. This construction is particularly desirable in shovels, spades and scoops employed in doing exceptionally heavy work.

From the above description, it will be noted that I have provided a shovel blade which is formed out of material, the strength of which corresponds to that usually employed in shovels of similar character, but have so strengthened the material that heavier work can be performed than is now possible in shovels of similar weight of other manufacture and without materially increasing the weight or cost of the material used in such manufacture.

Having thus fully described my said invention, what I desire to secure by Letters Patent, is—

1. A shovel, spade and scoop blade comprising a unit blank having a longitudinally extending thickened portion and provided with an integrally formed shank, a cylinder formed of said shank, and an integral rib formed out of said thickened portion and extending longitudinally through the center of the blade and shank.

2. A shovel, spade and scoop blade comprising a unit blank provided with an integral shank, a cylinder formed of said shank, a frog formed centrally of said blade and merging into said cylinder, and an integrally formed rib extending longitudinally through the center of said blade, frog and cylinder.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, this 1st day of October, A. D. one thousand nine hundred and twelve.

JOHN S. SURBAUGH. [L. S.]

Witnesses:
F. W. Woerner,
I. L. Larson.

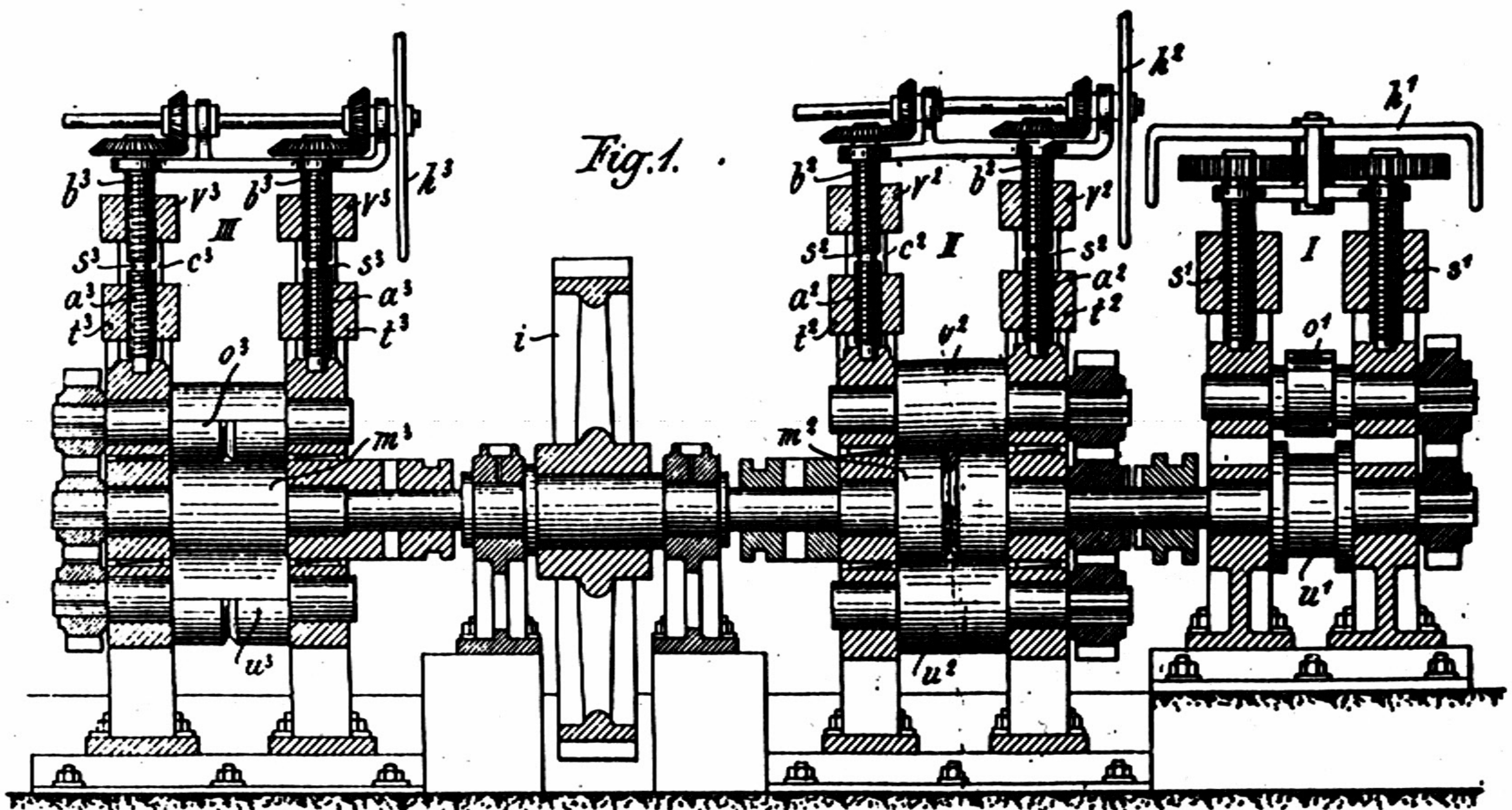


Fig. 1.

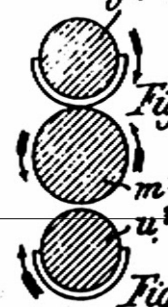


Fig. 4.

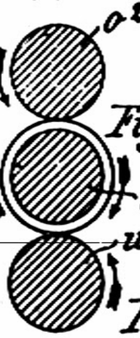


Fig. 3.

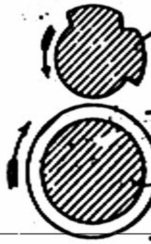


Fig. 2.

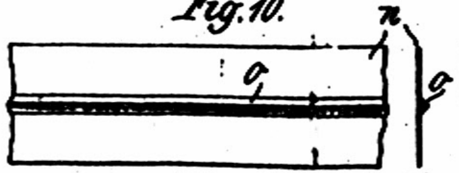


Fig. 10.

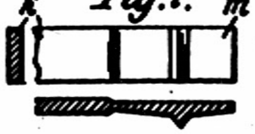


Fig. 7.

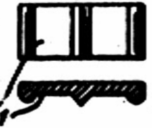


Fig. 8.

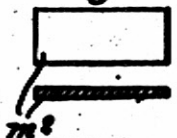


Fig. 9.

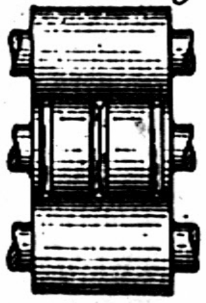


Fig. 5.

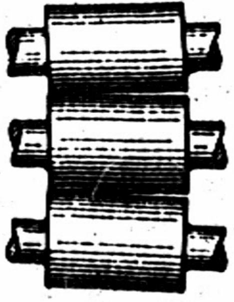


Fig. 6.

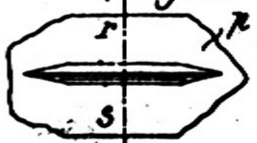


Fig. 13.

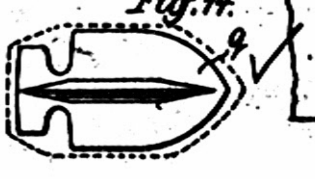


Fig. 14.

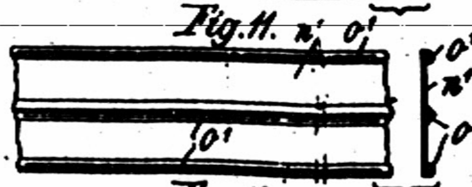


Fig. 11.

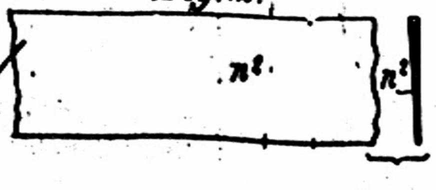


Fig. 12.

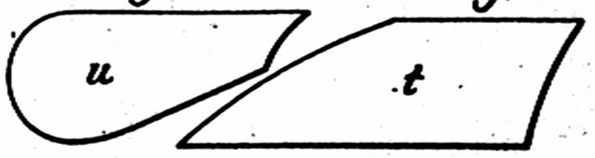


Fig. 16. Fig. 15.

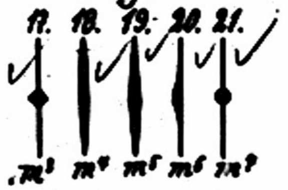


Fig. 17. 18. 19. 20. 21.

279 Translation of French patent no. 19,349, class VIII-3, 1st addition to patent no. 447,633, to Peter Wilhelm Hassel, residing in Germany, applied for Aug. 26, 1912, granted Sept. 2, 1914, published Dec. 29, 1914.

Rolling process for the fabrication of shovels and spades with reinforcing ribs.

This addition has for object a process and apparatus for rolling shaped metal bands serving, according to the principal patent no. 447,633 of Aug. 26, 1912, for the fabrication of shovels, spades, plowshares and other similar objects with reinforcing ribs.

The feature of the invention lies in the fact that we roll in a single operation in a two-high mill a blank taken from a block or bar of metal, that this blank is rolled into a band in several operations in a three-high mill and this band is rolled or pointed in such a way as to present ends either pointed or of the same thickness in a three-high mill in the form of a double two-high mill with reversal.

The apparatus for carrying out the process consists in a combination of a two-high mill, a three-high mill and a double two-high mill with reversal, coupled in such a way that the rollers of the middle portion of the three-high mill
and of the duble two-high mill receive their rotary
280 motion from a common drive (gears or other means)
while the lower roller of the two-high mill receives
its motion from the middle roller of the three-high mill.

The attached drawing shows by way of example one embodiment of the new system of rolling mill.

Fig. 1 is a longitudinal section of the three housings I, II and III.

Figs. 2, 3 and 4 are cross sections of the rollers of these housings.

Figs. 5 and 6 are front views of other constructive forms of the rollers of the three-high mill II.

Figs. 7, 8 and 9 are views in plan and cross section various blanks rolled in the two-high mill I by means of appropriate rollers.

Figs. 10, 11 and 12 show the bands obtained from these blanks in the three-high rolling mill II with corresponding rollers, figs. 1, 5 and 6.

Figs. 13 and 14 explain in what manner we obtain, for example, the band shown in fig. 10, the known blades for shovels and spades after their pointing in the double two-high mill with reversal III and after their stamping out.

Figs. 15 and 16 show mould boards for plows cut out or stamped out from the band as shown in fig. 12.

281 Figs. 17 to 21 show other profiles of sheet metal bands obtained from blanks in the housings I and II of fig. 1 by means of rollers of suitable shape.

The two-high mill, fig. 1, has in the known manner a lower roller u^1 disposed in fixed bearings and an upper roller o^1 adjustable by means of locking screws s^1, the two rollers showing, for example, the profiles of fig. 2. The locking screws s^1 are turned, for example, by means of a hand wheel h^1.

The three-high mill II, fig. 1, has a fixed central roller m^2 against which the upper adjustable roller o^2 and the lower adjustable roller u^2 may be simultaneously pressed during the working by means of a differential system of regulation by means of locking screws. The differential locking screws s^2 of this system of regulation have two screw threads of different pitches. By one of the screw threads a^2 the screws are moved in the internal threads of the upper crosspieces t^2 of the housing for the purpose of pressing the upper roller against the central roller, by the other screw thread b^2 they shift or elevate the crosspieces v^2 connected with the bearings of the lower roller u^2 by traction bars c^2 for pressing at the same time the lower roller against the central roller. The screws s^2 may be turned by hand h^2 with the aid of suitable bevel gears. This differential system of locking screws for the purpose of regulation does not, however, form part of the invention.

282 The double two-high rolling mill III with reversal, fig. 1, offers from the point of view of the arrangement of the three rollers o^3, m^3 and u^3 and the combination of the regulating system with differential set screws (locking screws) s^3, a^3, b^3, t^3, v^3, c^3 and h^3 the same arrangement as the three-high mill II with the difference that the upper and lower rollers are profiled in the form of a half moon so that the lower rollers and central rollers turn idly when the upper roller operates together with the middle roller (fig. 4) and vice versa. We obtain by the double two-high rolling mill with reversal with upper and lower rollers simultaneously adjustable during the working the result that the pronounced notch which is formed in the rolled blade during the rolling of the ends by two of the two-high mill rollers in the shape of a half moon is avoided. It is known that this rolling notch is due to the fact that one of the two couples of two-high rollers hitherto used for the rolling of the ends always rolls thinner than the other couple. Furthermore the double two-high mill with reversal III offers the great advantages of lower selling cost and smaller consumption of power than the usual pair of two-high mills because in place of four rollers there are only three and because it can never happen that the two rollers, one of which is in front of the housing and the other behind the housing as in the three-high mill II arrangement, will act at the same time.

283 The three housings I, II and III have a common gear i which drives the to fixed rollers of the middle part m^2 and m^3 of the housings II and III. The lower roller u^1 of the housing I is coupled to the central roller m^2 and derives its movement from the latter.

The rollers of the three-high mill II have a profile, figs. 1, 3, 5 and 6 which corresponds to the cross section of the band to be rolled from the blank so that if the blank is suitably chosen and depending on the profiled rollers chosen the band will receive on one or both sides, figs. 10, 11 and

20 or figs. 17, 18, 19, 21, one or more reinforcing ribs or flanges, figs. 9, 17, 21 or fig. 11, or a shape like a wedge, fig. 12.

Assuming that we must make shovel blades of the form shown in fig. 14 with the train of rolling mills shown in fig. 1 a metal bar k, fig. 7, having a rectangular cross section will be rolled in a single operation in the two-high mill I into a bar composed of successively joined blanks m. Then we cut off such a blank m from the bar, fig. 7, and with the aid of the three-high mill II this blank is drawn out in several operations in rapid succession to the desired thickness as a band n with reinforcing rib o, fig. 10, by a roller placed before the housing and by another roller placed after the housing, one of the two rollers having to make use of the hand wheel h^2 for the regulation or the locking of the upper and lower rollers.

284 The thicker the blank the longer naturally will be the band n from which we then cut off different pieces or lengths for the blades to be fabricated, following, for example, the dotted lines of fig. 10. These lengths or band sections are then sent to the double two-high mill with reversal III and are thus pointed or rolled at the ends. From the piece thus obtained p, fig. 13, we then obtain by stamping the spade blade q, fig. 14.

Previously we obtained the piece p, fig. 13, from a section of the band n, fig. 10, by rolling the ends of this section in two two-high mills. There resulted from this treatment the discovery that a pronounced notch was always rolled in the blade approximately along the dotted line r, s, fig. 13, because one of the two-high rolling mills rolled thinner than the other. This disadvantage of the rolling notch which rendered the goods unsalable, so to speak, is avoided with the aid of the housing III because the upper and lower rollers of this double two-high rolling mill with reversal may be regulated very exactly to the same approach or to the same spacing of the central roller by means of the differential set screw regulating system.

Fig. 11 shows a shaped band n^1 with three reinforcing ribs e^1 which was obtained from the blank m^1, fig. 8, by the three-high rolling mill rollers as in fig. 5.

285 Fig. 12 shows a band of sheet metal n^2 of wedge-shaped cross section which is very difficult to obtain, as we know, and which serves for the fabrication of mould boards, this band being obtained from the blank m^2, fig. 9, by means of three-high rolling mill rollers as in fig. 6 and the mould boards t and u, figs. 15 and 16, being cut or stamped out from this band.

Figs. 17 to 21 show examples of different profiles of metal bands m^3 to m^7 which we can obtain from corresponding blanks by the three-high rolling mill II with rollers of corresponding profile.

The drive for the rolling mill shown in fig. 1 may also be located between the housings I and II and the housing I on the one hand and the housings II and III on the other may also be operated separately.

Resumé

This patent of addition is concerned with a process and an arrangement of rolling mills for the rolling of shaped metal bands serving for the manufacture of shovels, spades, plowshares and other similar objects according to the process described in the main patent No. 447,633, this process and arrangement of the rolling mills having the following characteristics:

286 1. From a bar or a block of metal we obtain in a single operation in a two-high rolling mill a blank, in a three-high rolling mill this blank is rolled in several operations into a band and this band, separated if need be into sections, is rolled or pointed at the ends in a three-high rolling mill combined with a double two-high mill with reversal.

2. The combination comprises a two-high rolling mill, a three-high rolling mill with upper and lower rollers which may be pressed simultaneously during the working and a three-high mill assembled as a double two-high rolling mill with reversal the upper and lower rollers of which may like-

wise be pressed during the working, these three rolling mills being capable of connection at will or of being actuated either in common or by groups or separately.

3. The rolling mill serving for the rolling or pointing of the ends of the piece being worked consists of a three-high mill, the upper and lower rollers of which may be pressed simultaneously during the working and which is combined in the form of a double two-high mill with reversal.

4. The three-high and double two-high rolling mills with reversal with upper and lower rollers simultaneously adjustable during the working have profiled rollers corresponding to the blank and to the metal band into which the blank is to be converted by the rolling operation.

Tr/CP

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289 Div. 4—Rm. 7085 HAK:FM (SEAL) Paper No. 14

Department of Commerce
United States Patent Office
Washington

In re application of George M. Finkes, Serial No. 140,329, Filed May 3, 1937. For: Shovel.

Before the Board of Appeals on Appeal

Examiner's Statement.

This is an appeal from the final rejection of claims 1, 2, 3 and 4 (all of the claims in the case). These claims are as follows:

1. A shovel of the hollow back type consisting of a single piece of strip steel having a uniform cross section throughout its length but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges, and comprising a blade and a tubular socket and a hollow shank portion connecting the socket with the blade and forming a continuation of the frog por-

tion of the blade, whereby the shovel is substantially reinforced throughout a central longitudinal region comprising the frog, shank and socket and extending to the front edge of the blade.

2. A hollow back shovel of the type described consisting of a single piece of strip steel including a blade section and a tapering, tubular shank and socket section of circular configuration in cross section, the strip steel having
290 a central, longitudinal portion of sufficient width
to include the frog and the line of junction between the blade and shank, and of substantially uniform thickness greater than that of the portions on each side thereof, the said central portion extending the entire length of the strip steel whereby the blade section of the shovel includes a reinforced, longitudinal central portion of greater thickness than the side portions and the frog and the shank and socket section are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade.

3. A shovel of the hollow-back type consisting of a single piece of strip steel including a blade section and a tubular shank and socket of circular cross section, the strip steel having a central longitudinal portion of a width substantially one-fifth that of the back edge of the blade and of uniform thickness and tapering down laterally therefrom to the opposite edges, the said central portion extending the entire length of the shovel whereby the blade section has a reinforced longitudinal central portion including the frog of greater thickness than the side portions and the shank and socket are of substantially uniform thickness equal to the thickness of the central reinforced portion of the blade.

4. A shovel of the hollow-back type consisting of a single piece of strip steel with the grain running longitudinally thereof and having a uniform cross section through-
291 out its length but of variable thickness transversely
with the maximum thickness in the longitudinally extending central region and tapering down laterally there-

from to the opposite edges, and comprising a blade and a tubular socket and a hollow shank portion connecting the socket with the blade and forming a continuation of the frog portion of the blade, whereby the shovel is substantially reinforced throughout a central longitudinal region comprising the frog, shank and socket and extending to the front edge of the blade.

References cited:

Lowman	142,859
Myers	340,602
Surbaugh	1,083,952
French Patent	19,349

292 Applicant's device comprises a shovel blade which is stamped from a strip of rolled steel. The particular feature which makes applicant's shovel a success is the fact that the strip steel from which the shovel blade is stamped is of varying thickness, having its thickest portions where the greatest wear and greatest stresses occur, viz., from the center of the pointed cutting edge of the blade back to the frog and socket end of the blade. This thickest portion can readily be seen in Fig. 2 between the central lines a and b, from which the strip gradually tapers to the thinnest portions at its side edges. It can readily be seen from the dotted lines 3 and 4 in Fig. 2 that the thickest and strongest portion of the shovel will be located at the point of the blade, the frog 7 and the socket 9. A shovel with this particular form of a handle socket and frog is called a hollow-back shovel.

The Lowman patent shows a hollow-back shovel with an integral frog, socket and blade. Particular attention is called to the fact that the Lowman shovel is stamped from a single piece of strip metal and to the definite statement in the specification, page 2, lines 13-18 which is as follows:

"Nevertheless it will be obvious that the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the article, when made, will be exposed to the greatest strain."

The Myers patent discloses a shovel stamped from a
piece of rolled stock having a varying thickness (Fig. 2)
in the same proportion as applicant's shovel blade, viz., the
thickest through the center of the shovel and handle socket
and gradually tapering therefrom to the thinnest
293 portions along the edges. However, the Myers
shovel is not a hollow-back one.

The Surbaugh patent shows a hollow-back shovel stamped from a strip of rolled metal which has a thick central portion, so pronounced that it forms a distinct ridge 12 through the center of the shovel blade blank as a reinforcing and strengthening feature along and through the places of greatest wear and strain.

The French patent was cited to show that it is old to roll strips of varying thickness from which shovel blades are stamped. Rolling aligns the grains in the strip so as to be stronger for shovel blades, when stamped longitudinally therefrom, as shown.

The Surbaugh patent specifically shows a hollow-back shovel stamped from a strip of metal with a blade 10 having its thickest reinforcing portion 12 at its center, a frog 14, a tubular socket 11 and a hollow shank portion connecting said socket and blade as a continuation of said frog. These are all the elements claimed by applicant.

The Lowman patent together with the statement on page 2 of its specification, above-cited, also presents all the elements claimed by applicant, as follows: A hollow-back shovel stamped from a piece of strip metal which may be of varying thickness so that its thickest parts will be exposed to the greatest strain, comprising a blade *a*, a frog, a tubular handle socket *b*, and a hollow shank portion between said socket and blade as a continuation of said frog.

Claims 1, 2, 3, and 4 have therefore been rejected on the
Surbaugh patent or the Lowman patent in view of
294 the teachings of the Myers patent. The Myers
patent specifically teaches it to be old to form a
gradual taper from the thick center portion of the shovel
blade as a practical equivalent to the ridge 12 shown in

the Surbaugh patent or the modification described in the specification of the Lowman patent. The French patent merely is used as further proof that shovel blades with thick reinforced center portions could be stamped from a strip of rolled steel with the graining running longitudinally of the shovel blade. (Claim 4)

The limitation in applicant's claim 4 that the grain runs longitudinally in the shovel blade is deemed immaterial and obvious to one working in metal, as the act of having the grain running longitudinally in the wooden handle for the shovel is to a woodworker.

Applicant states that the Surbaugh and Myers references, of record, are impractical and he presents affidavits asserting that the shovel with a relatively thick central portion never was manufactured by Mr. H. M. Myers. Such evidence is merely negative. Moreover, the teaching of the Myers patent is so plain and the way of making the shovel is so obvious that it is believed that any metal worker could make it upon demand. Therefore, the patent is anticipatory regardless of whether or not the shovel was ever made.

The Lowman patent is alleged by applicant to be the first on a hollow-back shovel, and attention is again called to the statement in its specification that a variable thickness shovel blade, thicker in the portions of greater strain, was known at that time, some sixty years ago.

295 The affidavits filed in this case of applicant's commercial success are not refuted, and the superior advantages of his "Razor-Back" shovel, as he calls it, is admitted. However, such success alone does not prove patentable invention in view of the complete and early anticipation of every element of applicant's shovel by the Lowman patent, Surbaugh patent, Myers patent or French patent.

Applicant admits in his remarks of October 13, 1938, that commercial success cannot create an invention and here, in view of the complete teachings of the references, there is no doubt that there is nothing patentable in the device and, therefore, no doubt which could be resolved in favor of the applicant.

Applicant also admits that the Surbaugh patent, with its ridge reinforcement longitudinal of its blade to resist wear and a hollow-back frog, anticipates applicant's idea as being the theory on which applicant's shovel is based to make it practical.

Every feature of applicant's device is old in the shovel art or the art of rolling sheet steel, as shown by the cited references, and it is, therefore, held that the claims were properly rejected.

Respectfully submitted,

A. E. DONNELLY
Examiner, Division 4

296 Appeal No. 31,385
Hearing:

January 17, 1940

IN THE UNITED STATES PATENT OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte George M. Finkes

Application for Patent filed May 3, 1937, Serial No. 140,-329. Shovel.

Mr. Victor D. Borst for applicant.

This is an appeal from the action of the Primary Examiner finally rejecting claims 1 to 4, inclusive.

Claim 1 is illustrative and reads as follows:

1. A shovel of the hollow back type consisting of a single piece of strip steel having a uniform cross section throughout its length but of variable thickness transversely with the maximum thickness in the longitudinally extending central region and tapering down laterally therefrom to the opposite edges, and comprising a blade and a tubular socket and a hollow shank portion connecting the socket with the blade and forming a continuation of the frog portion of the blade, whereby the shovel is substantially reinforced throughout a central longitudinal region comprising the frog, shank and socket and extending to the front edge of the blade.

The references relied upon are:

Lowman	142,859	Sep. 16, 1873
Myers	340,602	Apr. 27, 1886
Surbaugh	1,083,952	Jan. 13, 1914
Hassel (French)	19,349	Aug. 26, 1912

The claims stand rejected as being unpatentable
297 over either of the patents to Lowman and Surbaugh.
Each of these patents discloses a shovel of the hollow back type having the claimed shape in respects other than cross section. Lowman shows cross sections of uniform thickness. He states that although he prefers to use sheet metal of one equal thickness, nevertheless it will be obvious that the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the article, when made, will be exposed to the greatest strains. If there were doubt as to which parts of a shovel blade are exposed to the greatest strain, the information would be supplied by the patent to Myers. This patent discloses a shovel blade provided with straps for securing it to a handle. The patent states the greatest strain on the shovel blade, and also on the straps, is always at, along, and on the longitudinal center line of the blade and straps; hence it will be apparent that the greatest thickness of metal should be at that part of the blade and straps. Myers' shape in cross section is quite similar to that of the applicant's shovel.

The patent to Surbaugh which also discloses a shovel of the hollow back type has a thickened central portion extending throughout its length. The cross sectional shape in Surbaugh is considered to be the equivalent of that in the application.

The claims are considered not allowable over either Lowman or Surbaugh. Applicant's specific cross sectional shape
does not constitute a patentable distinction over the
298 centrally thickened structures of this references,
since, at best, it is not a patentable variation of the shape shown in Myers.

For the reasons stated above and the additional reasons advanced in the examiner's statement, the claims on appeal are considered to be unpatentable.

The decision of the examiner is affirmed.

EUGENE LANDERS
Examiner-in-Chief
E. T. MORGAN
Examiner-in-Chief
C. H. SHAFFER
Examiner-in-Chief
Board of Appeals

February 3, 1940
Mr. Victor D. Borst
10 E. 40th Street
New York, N. Y.

PLAINTIFFS' EXHIBIT NO. 9.

No. 757,783. **PATENTED APR. 19, 1904.**

F. SKELTON.
METHOD OF MAKING SHOVELS.
APPLICATION FILED DEC. 7, 1903.

NO MODEL.

Fig.1

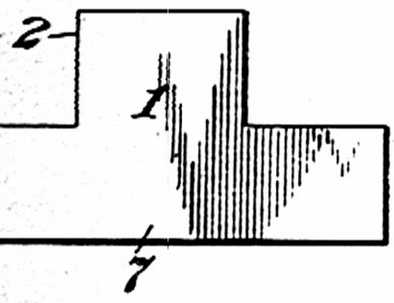


Fig.2

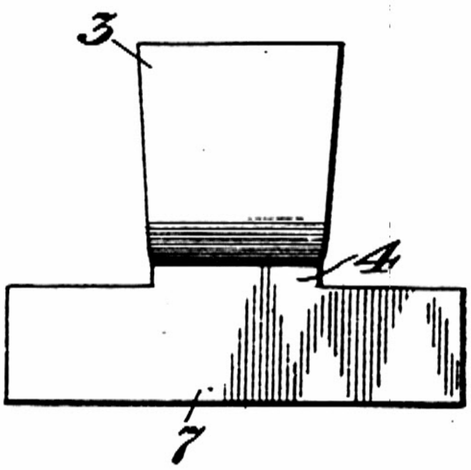


Fig.3

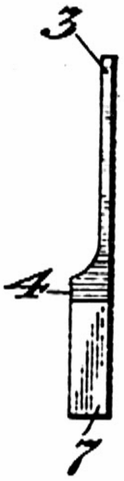


Fig.4

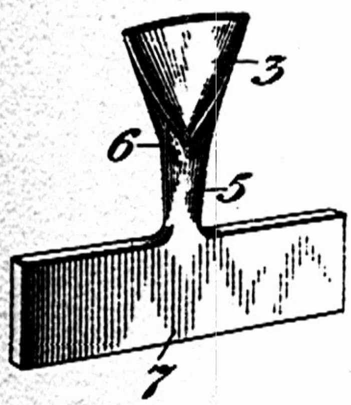


Fig. 5

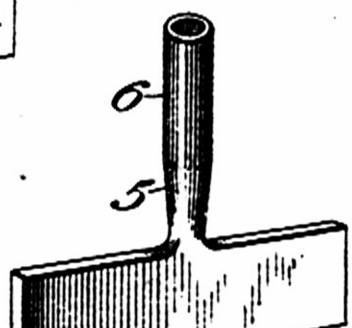
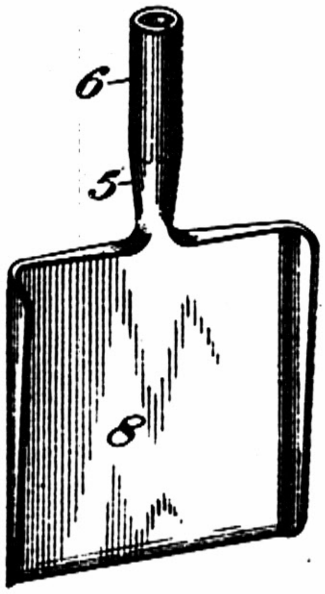


Fig.6



Witnesses
Chas. J. Clagett
Arthur A. Hill

Inventor
Frederick Skelton
By his Attorney
Wm. Stockbridge

No. 757,783. **Patented April 19, 1904.**

UNITED STATES PATENT OFFICE.

FREDERICK SKELTON, OF MARTINS FERRY, OHIO.

METHOD OF MAKING SHOVELS.

SPECIFICATION forming part of Letters Patent No. 757,783, dated April 19, 1904.

Application filed December 7, 1903. Serial No. 184,116. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK SKELTON, a citizen of the United States, residing at Martins Ferry, Belmont county, Ohio, have invented a new and Improved Method of Making Shovels, of which the following is a specification.

My invention resides in an improved method of making shovels and other like tools, the object of the same being to provide for the production of a shovel from a bar or sheet of steel having an integral blade, socket, and solid shank and in which the shank merges smoothly and without abruptness into the socket and in which a lateral opening in the socket is dispensed with.

The details of my invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a face view of one of the blanks from which the shovel is made. Fig. 2 is a similar view of the same with the right-angled fang thereon rolled out into a thin sheet. Fig. 3 is an edge view of the blank in the condition in which it is shown in Fig. 2. Fig. 4 is a perspective view showing the thick portion of the fang reduced and the socket partially formed. Fig. 5 is a similar view showing the socket completely formed, and Fig. 6 is a view of the shovel in its completed condition with the exception of the handle.

In carrying out my improved method I start with a blank 1, of bar or sheet steel or other suitable metal, the same being formed on one side with a right-angled fang 2. A portion of this fang is first rolled out, as shown at 3 in Figs. 2 and 3 of the drawings, leaving a part 4 of the fang at its point of juncture with the body of the blank in its original thickness. The next step of the method is to reduce or compress, by forging, the thick portion 4 of the fang 2 to form the solid shank 5 and to simultaneously turn or coil the lower end of the part 3 of the fang to partially form the socket 6. Afterward the part 3 of the fang is turned or coiled throughout its entire length to complete the formation of the socket. The body portion 7 of the blank is then plated or rolled out to form the blade 8 of the shovel, as clearly shown in Fig. 6.

It should be stated that in order that the lower end of the thin portion 3 of the fang may be coiled to partially form the socket at the time when the compression or forging of the thick portion 4 takes place it is necessary to slightly curve or bend or give a lead to said thin portion 3 adjacent to the part 4 prior to the starting of the forging or compressing step; otherwise there would be danger of said thin portion 3 turning or coiling in the wrong direction or of not turning at all and buckling up into a lump. Uniform and satisfactory results can be obtained only by giving this curve or lead to said thin portion of the fang. It is not necessary, however, that the curve be a deep one.

The feature of my invention as above described is the partial formation of the socket 6 by the coiling or turning of the fang simultaneously with the compression or forging of the thickened portion 4 of said fang to form the solid shank. In this way the socket and shank are caused to merge smoothly and without abruptness into each other and, further, the formation of a lateral opening in the socket which tends to weaken the tool at that point is dispensed with.

As thus constructed it will be seen that the completed shovel is made from a single piece of bar or sheet steel, with the blade, shank, and socket all integral with each other and with the parts strengthened at those points where the most strain is met with and where the most strength is desired.

Having now described my invention, what I claim is—

The method of making shovels and the like, which consists in rolling out into a thin sheet a portion of a right-angled fang of a blank of metal, leaving that portion of the fang adjacent to the body of the blank in a thickened condition, then forging or compressing the thick portion of the fang to form a solid shank and simultaneously turning the edges of the lower end of the thin or rolled portion thereof to partially form a socket, and afterward turning the remaining part of said fang to complete the formation of the socket.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERICK SKELTON.

Witnesses:
WM. M. STOCKBRIDGE,
JOHN F. LAMBRAIS.

PLAINTIFFS' EXHIBIT NO. 10.

Feb. 21, 1933. A. MILLIGAN 1,898,590

SHOVEL

Filed June 19, 1931

FIG. 1.

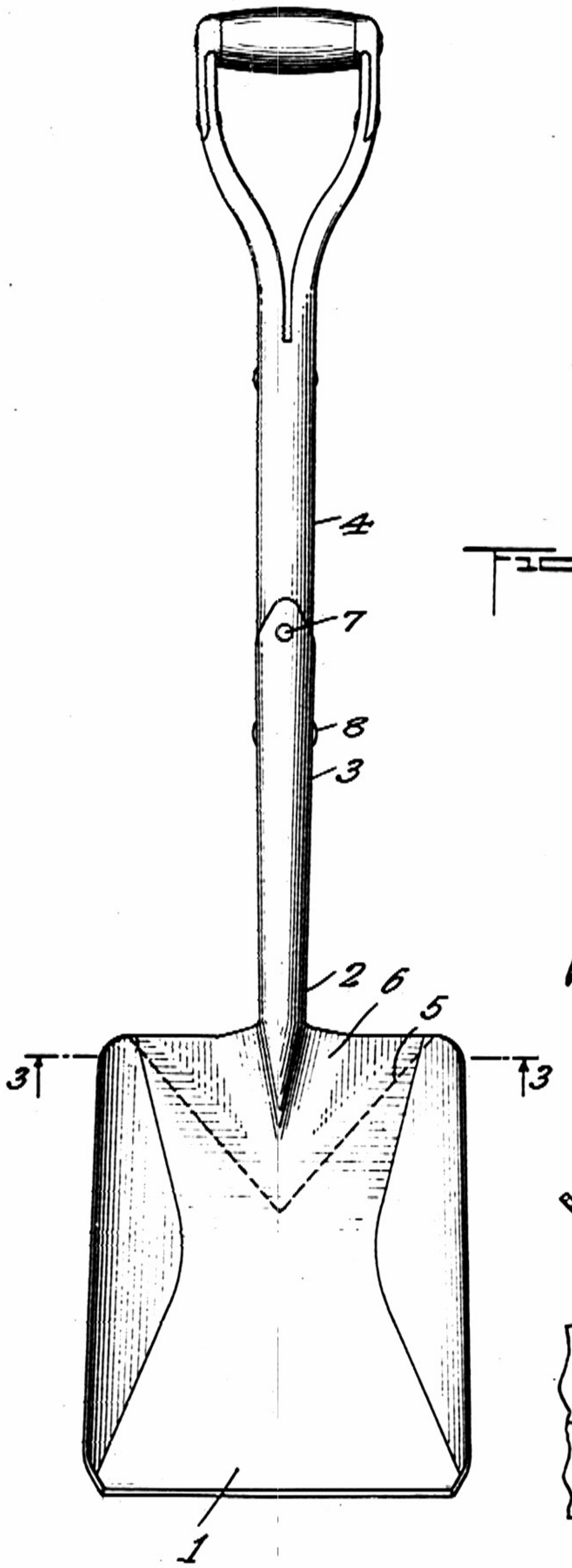


FIG. 2.

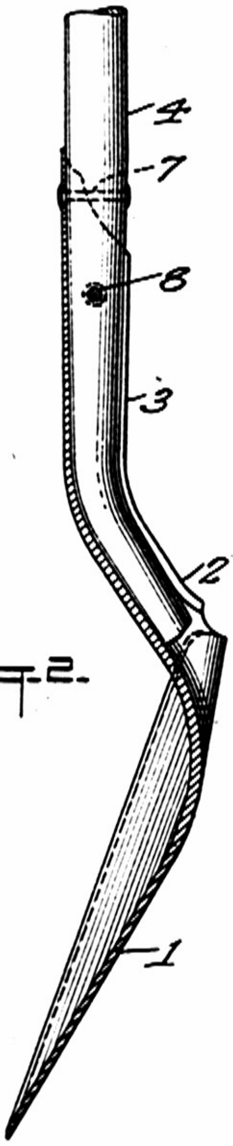


FIG. 5.

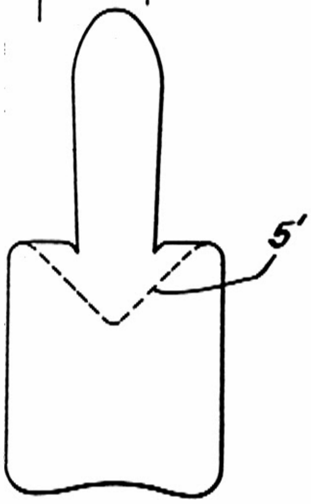


FIG. 6.

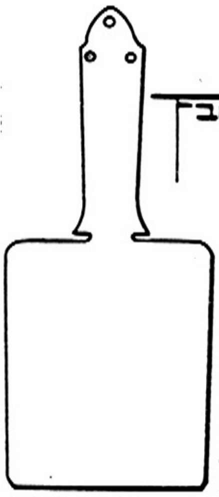


FIG. 3.

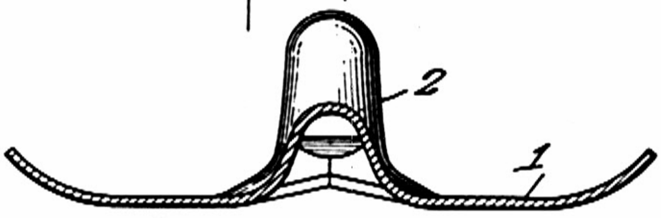
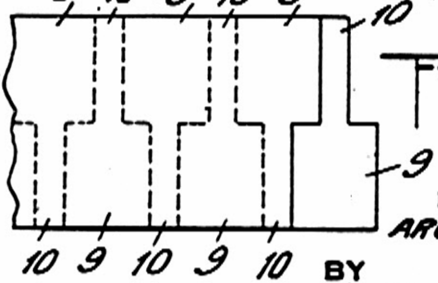


FIG. 4.



INVENTOR
ARCHIBALD MILLIGAN

BY Victor D. Borst
ATTORNEY

Patented Feb. 21, 1933 **1,898,590**

UNITED STATES PATENT OFFICE

ARCHIBALD MILLIGAN, OF FREDONIA, NEW YORK, ASSIGNOR OF ONE-HALF TO
EDWARD W. McCARTY

SHOVEL

Application filed June 19, 1931. Serial No. 545,400.

My invention relates to shovels and in particular to that type of shovel which is made from a single piece of metal. Such shovels may be divided into two classes, one class being known as the solid shank shovel and the other being commonly called the hollow back shovel. The solid shank shovel has been made from bar steel from which blanks are cut for the shovels. The blanks cut from a bar are of T-shape and successive blanks are cut reversely so that the entire bar may be utilized without waste. From these T-shape blanks, the shovels are formed by a series of forging and rolling operations. The head of the T-shape blank is shaped by the forging and rolling operations to form the blade of the shovel, and the stem of the T-shape blank is shaped by the same operations to form a solid shank and a socket. Shovels made in this way have the advantage of having great strength where it is needed, that is, in the shank and at the junction of the shank and the blade. The disadvantage of these solid shank shovels is the expense in manufacture, as the equipment and labor required is very great.

The open back or so-called hollow back shovel has commonly been made from sheet steel and the socket, shank and blade of these shovels are of the same thickness. The shank of the shovel is united to the blade by a ridge or frog formed in the blank to strengthen the shovel at the junction between the shank and the blade. The ridge or frog extends well forward into the blade, approximately one-half of the distance between the back or shoulder of the blade and the front edge of the blade. Although this type of shovel is less expensive to manufacture than the solid shank shovel, there is considerable waste of material. The shovel itself has many disadvantages, among which is the fact that it is weak at those points where it needs strength, particularly at the junction between the shank and blade where the metal has been drawn to form the frog. These shovels, in use, frequently crack and break along the edge of the frog joining the shank and blade.

In accordance with my invention, I provide a shovel which offers the strength of the solid shank shovel and which may be produced less expensively than the hollow back shovel. The shovel embodying my invention is characterized by the fact that the part which sustains the greatest stress is made strongest, the metal of that part being thicker than that of the rest of the shovel. This strengthened part comprises the shank and its connection with the blade including the frog and the immediately surrounding area. The shovel is formed from plate steel as distinguished from bar steel or sheet steel. The plate steel used is of a gage between the bar steel used for the solid shank shovel and the sheet steel used for the hollow back shovel; it is wider than the bar from which the blanks for a solid shank shovel are cut and is not as thick as the bar. The plate is, however, of less width and of greater thickness than the sheet steel from which the hollow back shovels are made. From the plate, blanks are cut which are substantially T-shape, each blank having a section for the blade and a section for the shank and socket of the shovel. These blanks are cut so that successive blanks are reversed, thereby utilizing all the metal of the plate and avoiding any waste. By a succession of forging operations, the metal of each blank is drawn to form the blade, the shank and the socket of the shovel. The metal is so drawn that the shank portion of the shank and socket section of the blank, and a substantially triangular portion of the blade, having the base thereof along the back or shoulder of the blade, and the apex thereof extending down into the blade, are left substantially the same in thickness as the original blank. This triangular portion of the blade includes the line or area of the junction between the shank and the blade where the shank merges into the blade. Outside of this triangular portion of the blade, the metal of the blade section of the blank is drawn to a substantially uniform thickness. The metal of the socket portion of the shank and socket section of the blank is drawn so that the thickness thereof tapers toward the outer or handle end, which end is drawn to a very thin edge so that it may better unite with the handle. The blade and the shank and socket are then formed and shaped. The shank and socket are made tubular and together form a reverse taper, the shank flaring outwardly to merge into the blade and the socket flaring outwardly towards the outer or handle end to receive a complementary tapering handle. The shank of the shovel is curved so that between the blade and the socket there is formed a substantially reverse curve. By leaving the shank and the portion of the blade at which the shank merges into the blade of the same thickness as the original blank, the requisite strength is obtained at these points and the resulting shovel is no heavier than the ordinary hollow back shovel.

With this method, the shovel of this invention may be made less expensively than the ordinary hollow back shovel. With the ordinary hollow back shovel which is made from sheet steel, there is considerable waste. The value of the material so wasted is greater than the cost of the extra labor required in drawing the metal of the shovel of this invention.

A shovel embodying my invention is illustrated in the accompanying drawing in which:

Fig. 1 is an elevation of a shovel constructed in accordance with my invention;

Fig. 2 is a fragmentary sectional, side elevation of the same;

Fig. 3 is a sectional, end elevation taken on the line 3—3 of Fig. 1;

Fig. 4 is a plan of a plate having the blanks outlined thereon;

Fig. 5 is a front elevation of a blank after it has been drawn; and

Fig. 6 is a front elevation of a blank after being trimmed and prior to the shaping of the blank.

The shovel illustrated in the drawing includes a blade 1, a shank 2, a socket 3 and a handle 4 which may be any of the handles commonly used. The blade, shank and socket are integral, being formed from a single piece of metal. The blade, which is shaped as shown, has two portions of different thickness, one a triangular portion having the base thereof along the rear edge or shoulder of the blade and the apex extending well down into the blade. Metal in this portion of the blade which is indicated on the blade by the broken line 5 is of greater thickness than the remainder of the blade, the thickness of this portion tapering down to the thickness of the remainder of the blade which is of substantially uniform thickness. Within this triangular portion of the blade there is a small triangular ridge or frog 6 where the shank merges into the blade.

The shank of the shovel unites the blade and the socket and in effect constitutes the lower portion of the socket, the shank and socket being tubular. The metal of the shank is of the same thickness as the metal of the aforementioned triangular portion of the blade, and the shank has a reverse taper, flaring out at the blade end to merge into the blade at the frog 6, and flaring outwardly at the socket end to form a continuation of the socket which is tapered. The shank is curved so that there is a substantially reverse curve between the blade and the socket.

The metal of the socket tapers in thickness from the thickness of the metal of the shank to a very thin edge at the outer end. The thin edge at the outer end of the socket forms with the handle a substantially flush or smooth joint. The taper of the socket is such that the circumference of the socket at its outer end is approximately an inch larger than the circumference at the inner end where it joins the hollow shank.

The handle of the shovel is tapered to correspond with the taper of the socket and shank and extends through the socket and shank to the point where the shank flares outwardly to merge into the blade. The handle is secured in the socket, in addition to its frictional engagement with the walls thereof by two rivets 7 and 8 at right angles to each other. The outer end of the socket is shaped as shown so that one side is longer than the other. The rivet 7 extends through this extended portion of the wall of the socket and through the handle, and the rivet 8 extends through the handle and diametrically opposite points of the socket, at right angles to the rivet 7.

The blade, shank and socket of the shovel described above are formed from blanks cut from steel plate, the plate varying in width from 10 to 13 inches, depending upon the size of the shovel, and being an 8 gauge steel or about 3/16th of an inch in thickness. Such a plate is illustrated in Figure 4. The character of the blanks cut from the plate are somewhat T-shaped having a section 9 for the blade and a section 10 for the shank and socket. Successive blanks are reversed so that the shank and socket section of one blank is between the blade sections of the blanks on either side, and the blade section is between the shank and socket sections of the blanks on either side. This reversal of the blanks avoids any waste other than the material left at the ends of a plate.

Each blank so cut is submitted to a series of hammering or rolling operations to draw the metal of certain portions of the blank. The metal of the shank portion of the shank and socket section and the triangular portion of the blade of the shovel, indicated by broken lines 5′ in Figure 5, is not drawn by these hammering or rolling operations, or depending upon the weight of the shovel desired, these portions of the blank may be

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drawn a certain amount, and the metal of the rest of the blank drawn a correspondingly greater amount. The metal of the blade, outside of the aforementioned triangular portion, is drawn to a uniform thickness, the metal at the edge of the triangular portion of the blade tapering in thickness to the thickness of the remainder of the blade. By further rolling and hammering operations, the metal of the socket section of the blank is gradually thinned down so that the thickness of the metal tapers to the thickness of substantially an 18 gauge at the extreme outer or handle end.

The shank and socket sections are trimmed as shown in Figure 6 to take care of the reverse tapers on the finished shovel. A cut is made at the junction of the shoulder of the blade and the shank, on either side of the shank, as illustrated in Figure 6, so that when the shank and socket sections are shaped, the two edges of the shank and socket section will meet throughout the length of the continuous shank and socket.

After the metal has been properly drawn and trimmed, it is shaped. The metal of the shank and socket section of the blank is shaped to form a tubular shank and socket, the ridge or frog 6 is formed in the blade and the shank is curved so that there is a substantially reverse curve between the blade and the socket.

It is obvious that various changes may be made in the details of the shovel described above by those skilled in the art within the principle and scope of my invention as expressed in the appended claims.

I claim:

1. A hollow back shovel consisting of a single piece of plate metal comprising a blade and a tubular shank and socket, the blade having two portions of different thickness, the thicker portion including the frog and the junction with the shank and surrounded except at the back edge by the portion of lesser thickness.

2. A shovel of the hollow back type comprising a one-piece steel member in the form of a sheet of variable thickness and constituting a blade and a tubular shank and socket, the wall of the shank and an adjoining portion of the blade including the section in which the shank merges into the blade being of greatest thickness, and the rest of the blade being of a lesser and substantially uniform thickness with the transition gradual between the two blade portions of different thickness.

3. A shovel of the hollow back type comprising a one-piece steel member in the form of a sheet of variable thickness and constituting a blade and a tubular shank and socket, the wall of the shank and an adjoining approximately triangular portion of the blade including the section in which the shank merges into the blade being of greatest thickness, and the rest of the blade being of a lesser and substantially uniform thickness with the transition gradual between the two blade portions of different thickness.

In witness whereof, I hereunto subscribe my signature.

ARCHIBALD MILLIGAN.

PLAINTIFFS' EXHIBIT NO. 15.

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(No Model.)

H. M. MYERS.

BAR FOR MAKING SHOVEL BLANKS.

No. 340,607. Patented Apr. 27, 1886.

Fig. 1

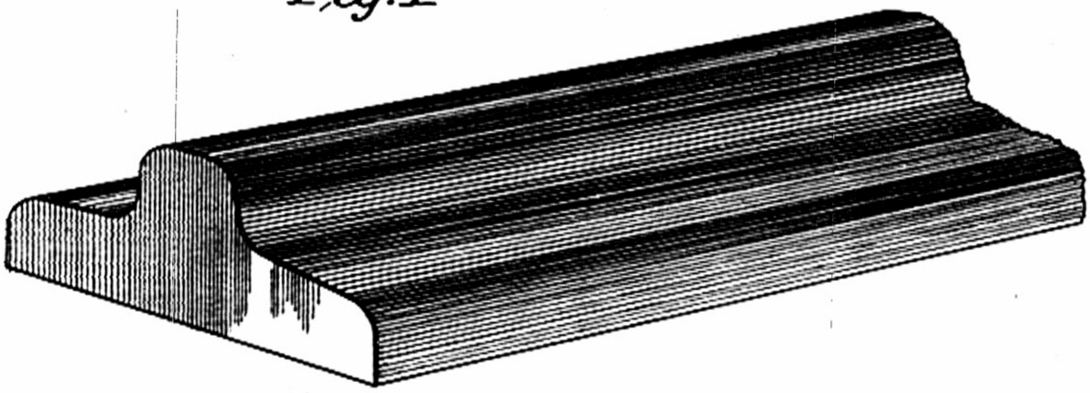


Fig. 2.

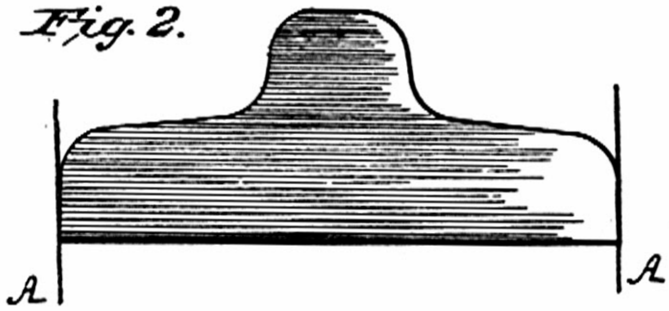


Fig. 3.

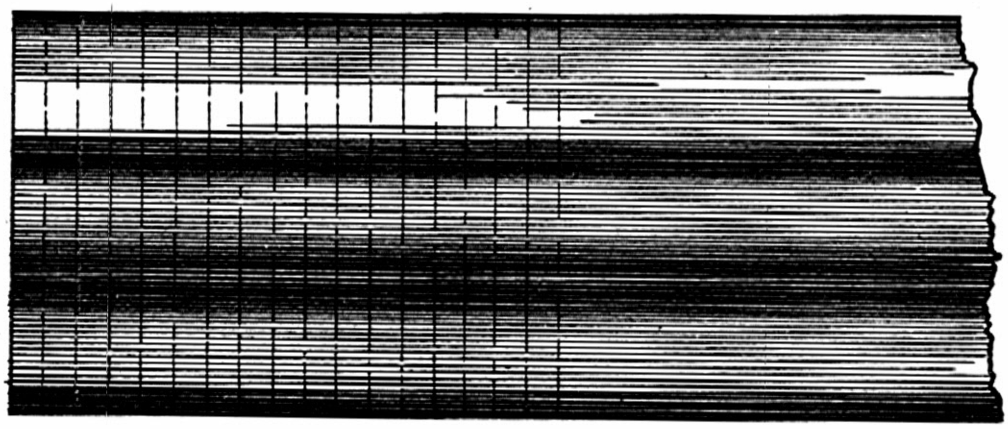
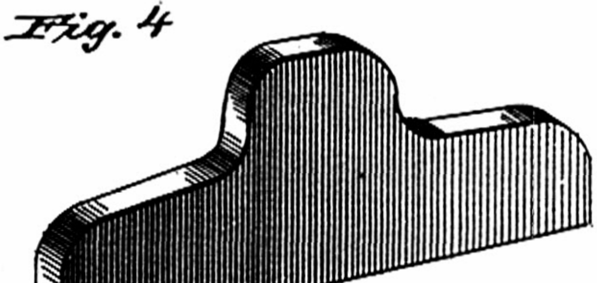


Fig. 4



WITNESSES:

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James F. Johnston

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N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

HENRY M. MYERS, OF BEAVER FALLS, PENNSYLVANIA.

BAR FOR MAKING SHOVEL-BLANKS.

SPECIFICATION forming part of Letters Patent No. 340,607, dated April 27, 1886.

Application filed March 27, 1885. Renewed October 26, 1885. Serial No. 180,964. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. MYERS, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in a New Article of Manufacture for Making Blanks for Shovels, Spades, and Scoops; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a new article of manufacture, which consists of a rolled bar of iron or steel having a vertical longitudinal projection on one side of it, the width of said bar being about equal to the width of the shovel, spade, or scoop made from a blank severed from said bar.

To enable others skilled in the art with which my invention is most nearly connected to make my new article of manufacture, I will proceed to describe its construction and the operation of severing blanks therefrom for making shovels, spades, and scoops.

In the accompanying drawings, which form part of this specification, Figure 1 is a perspective view of a bar of iron or steel rolled into the proper form for severing blanks therefrom for making shovels, spades, or scoops. Fig. 2 is an end elevation of the same. Fig. 3 is a top view or plan of the same. Fig. 4 is a perspective view of a blank when severed from said bar.

A billet of iron or steel is heated in an ordinary heating-furnace (the construction and manipulation of which is well understood) to the proper degree for forging it. The heated billet is then rolled into the form shown in Figs. 1 and 2 by means of rolls having suitable grooves in the lower roll of the pair.

The construction of the rolls for rolling the said bar will be readily understood by the skillful "roll turner," and therefore need not be described. Neither is it necessary to describe the operation of rolling said bar, as that will be fully understood by the skillful roller.

The width of the bar herein described between the vertical lines A A (shown in Fig. 2) should be in all cases within a fractional part of an inch about equal to the width of the finished shovel, spade, or scoop made from a blank severed from said bar.

The bar constructed as hereinbefore described as an article of manufacture, to be obtained from the manufacturer of iron and steel by the shovel-maker, will enable the latter to dispense with the machinery and power necessary to produce said bar, and also with much of the skilled labor required for the making of blanks for shovels, spades, and scoops.

The shovel-maker having obtained from the iron or steel manufacturer the bar shown in Figs. 1 and 2, he heats it in a suitable heating-furnace and then saws or cuts it transversely into sections, as indicated by dotted lines in Fig. 3, whereby blanks are obtained of the form shown in Fig. 4, which may be manufactured into shovels, spades, or scoops by any of the several methods known to the art.

The process for making blanks herein described is claimed in another application herewith filed, Serial No. 160,242.

Having thus described my invention, what I claim is—

A rolled bar of the form shown and described for making blanks for shovels, spades, or scoops, the width of said bar being about equal to that of a finished shovel, spade, or scoop made from a blank severed therefrom, substantially as described.

HENRY M. MYERS.

Witnesses:
WM. W. S. DYRE,
JAMES J. JOHNSTON.

UNITED STATES
COURT OF APPEALS FOR THE
DISTRICT OF COLUMBIA

FILED JUN 8 - 1942

Joseph W. Stewart

BRIEF FOR APPELLEE

In the United States Court of Appeals for the District of Columbia

No. 8228

GEORGE M. FINKES AND THE UNION FORK AND HOE CO.,
APPELLANTS

v.

CONWAY P. COE, COMMISSIONER OF PATENTS, APPELLEE

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

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463679—42

In the United States Court of Appeals for the District of Columbia

No. 8228

GEORGE M. FINKES AND THE UNION FORK AND HOE CO.,
APPELLANTS

v.

CONWAY P. COE, COMMISSIONER OF PATENTS, APPELLEE

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

BRIEF FOR THE COMMISSIONER OF PATENTS

INTRODUCTION

On February 3, 1942, Associate Justice McGuire of the District Court of the United States for the District of Columbia signed a final judgment (Appellants' App. 12) dismissing the complaint of appellants (Appellants' App. 2) brought under Section 4915 R. S. (U. S. C., title 35, sec. 63). By that complaint, appellants as, respectively, the applicant in, and the assignee of application, Serial No. 140,329, filed in the U. S. Patent Office on May 3, 1937, sought to have said court authorize the Commissioner of Patents to issue to them a patent including claims 1, 2, 3 and 4 of such application. By this appeal, however (Appellants' App. 12), appellants seek only authorization for the issuance of a patent containing said claim 3; claims 1, 2 and 4 have been dropped.

Claim 3 is copied in appellants' brief on page 5. It and the other claims are copied in the Examiner's Statement (Appellants' App. 124 to 126). All these claims were finally rejected

(Appellants' App. 32 to 34) by the Primary Examiner in the Patent Office and his action was affirmed by the Board of Appeals (Appellants' App. 130 to 132), prior to the filing of the complaint.

THE PATENT APPLICATION IN SUIT

The subject matter of the aforesaid application (Appellants' App. 13 to 18), filed in the name of the appellant, Finkes, is a shovel. That shovel is succinctly described by Edward Durell (Appellants' App. 93 and 94), the president of the company to which the application is assigned, the other appellant, as "a hollow-back type of shovel" which "has a thickened center section"; in regard to Finkes' alleged conception of the shovel, this witness states that "Finkes hit upon the idea of making a hollow-back type of shovel from a blank of strip steel which had a thickened center section extending from the top of the socket to the point of the blade."

Counsel for appellants (Appellants' App. 20) credit Lowman, whose patent, No. 142,859, granted September 16, 1873, is in evidence (Appellants' App. 109 to 111), with inventorship of the hollow-back type of shovel. The shovel illustrated in that patent is a representative hollow-back shovel. In common with the shovel there illustrated and with all shovels of the hollow-back type, the shovel disclosed in the Finkes application comprises a blade 6, a hollow frog portion 7, a shank portion 8, and a socket 9. In accordance with Durell's description, the Finkes shovel is stamped from a blank cut from a strip of steel that is rolled in strip form, the strip being rolled so that it has a uniform cross-section throughout its length, but is of variable thickness transversely, with the maximum thickness in the longitudinally extending central portion and tapering down therefrom to the opposite edges. The shovel so stamped is substantially reinforced throughout a central, longitudinal region comprising the frog, shank, and socket, and extending to the front edge of the blade.

Finkes, in his application (Appellants' App. 15), recites two advantages of the described shovel construction. He says the thicker central zone, running from end to end of the shovel:

(1) Reinforces the entire socket and shank section and the frog where breakage is most likely to occur.

(2) Provides the extra metal at the front end where, especially in a pointed shovel, it customarily wears away.

THE PRIOR ART RELIED UPON BY APPELLEE

The appellants discuss (Brief, pages 8 to 12) seven prior art patents, but only four of these were cited by and are relied upon by the appellee. These four patents are: Lowman, No. 142,859; Myers, No. 340,602; Surbaugh, No. 1,083,952, and Hassell, French patent No. 19,349. Claim 3 on appeal, and the other claims not appealed, were by the District Court (Appellants' App. 11) held anticipated by the patents to Lowman and Surbaugh; but, if not anticipated by these patents, then not patentable over said patents, in view of the teachings of the patents to Myers and Hassel.

The Lowman patent (Appellants' App. 109 to 111) shows, as stated, the pioneer hollow-back shovel. The shovel expressly is made of one piece of "sheet metal." Most importantly here, Lowman recites (Appellants' App. 111) that—

> Although I prefer to use sheet metal of one equal thickness, nevertheless it will be obvious that the sheet metal for the blanks may be rolled of unequal thickness, making it thickest in the parts which in the article, when made, will be exposed to the greatest strain.

Though it should be evident, Lowman does not assert what parts of his shovel are exposed to the greatest strain. Whatever deficiency there might be in the disclosure of the Lowman patent, however, is supplied by the Myers patent, No. 340,602 (Appellants' App. 112 to 114). This patent discloses a strap shovel, but it is plain (for example, from an analysis of claim 2 of the patent), that the invention of Myers there protected was not limited to such a shovel. Myers teaches (Appellants' App. 114) that:

> The greatest strain on the shovel-blade, and also on the straps, is always at, along, and on the longitudinal center line of the blade and straps; hence it will be ap-

> parent that the greatest thickness of metal should be at that part of the blade and straps.

In regard to the manufacture of his shovel, Myers states:

> In making my new article of manufacture I use any of the known forms of blanks for shovels adapted to be plated or rolled, which blanks are plated or rolled in such manner that the shovel-blade A is of a determined thickness lengthwise of the blade and of the handle-straps B B, and gradually diminishing in thickness from the center of the edges C C of said blade and straps, as shown in Figs. 2 and 3.
>
> * * * * *
>
> The essential feature of my new article of manufacture consists in making the shovel-blade thick at its center and throughout its length, and diminishing in thickness toward each edge C C, as shown in Fig. 2, in contradistinction to the blade being of uniform thickness, and in contradistinction to the blade being thick at its upper edge and gradually diminishing in thickness to its point.
>
> The advantage of my new article of manufacture consists in uniformity of wear of the entering end of the shovel-blade, and imparting strength to the blade and handle-straps at the place subjected to the greatest strain and wear.
>
> * * * * *
>
> The greatest wear of the shovel-blade is always at the center of the entering end of the blade.

The patent to Surbaugh (Appellants' App. 115 to 117) discloses, in Figs. 3, 4 and 5, a hollow-back shovel. Surbaugh sought to reinforce the weak portions of such a shovel, and particularly, the point of the blade and the end of the frog (Appellants' App. 116, lines 16 to 21). He did so by providing a longitudinal, central rib 12 extending from end to end of the shovel blade. Surbaugh recites (Appellants' App. 116, lines 50 to 55) that the blank 10, from which he forms his shovel, consists of a thin piece of sheet steel that is "rolled to provide a rib 12 whereby the metal is left more thick * * * thereby adding strength and rigidity to the sheet." Surbaugh teaches (Appellants' App. 116, lines 68 to 85) that the rib adds strength and rigidity to the entire shovel blade; that it reinforces the weakest point of the blade where the frog merges with the blade; and that the rib so strengthens the blade that a shovel of comparatively light character can be used in doing exceptionally heavy work.

The French patent to Hassel discloses the rolling of strips from which shovel blade blanks are cut, said strips varying in thickness in transverse cross-section. The rolling of shovel blades of the form shown in Fig. 14 is explained in the specification (Appellants' App. 122).

SUMMARY OF ARGUMENT

1. Claim 3, on appeal, does not differ in any significant sense from unappealed claims 1, 2 and 4. Claims 2 and 3 contain the same substantial limitations. The proportions recited in claim 3 are not critical. The broad concept of thickening the longitudinally extending central portion of a hollow-back shovel is the only significant limitation in appealed claim 3. Claim 3 defines a shovel, and is not concerned with the process by which it is made.

2. Claim 3 is anticipated by the patents to Lowman (Appellants' App. 109 to 111) and Surbaugh (Appellants' App. 115 to 117). If not anticipated by these patents, then it is unpatentable over these patents, in view of the teachings of the patent to Myers, No. 340,602 (Appellants' App. 112 to 114) and of the French patent to Hassel (Appellants' App. 118 to 124). The disclosure of the Lowman patent is broad, but still sufficiently specific to serve as an anticipation of claim 3. It makes no difference that the Surbaugh shovel may be impractical and that it has not been exploited. Myers shows a strap shovel having a cross-sectional shape similar to that of the shovel of appellant Finkes, and the advantages claimed for that shovel are the same as those claimed by Finkes for his.

3. Doubt as to the patentability of claim 3 is not to be resolved in favor of appellants. Commercial success does not con-

fer patentability. The granting of a patent by the Canadian Patent Office is immaterial. Appellants are not entitled to a patent containing claim 3.

ARGUMENT

Scope and subject matter of claim 3

1. Appellants present claim 3, on appeal, as "specific to the precise construction which the record shows has made a decided impression on the art" (Brief, page 2). Thus, appellants apparently would have it that their claim 3 expresses a concept not expressed in their claims 1, 2 and 4, which they have now dropped. Claim 3 (Appellants' App. 16) does recite that the thickened central portion of the blade of Finkes' shovel is of a width substantially one-fifth that of the back edge of the blade. Such a limitation is in accordance with the description of the shovel and shovel blank in Finkes' application (Appellants' App. 14); there it is stated that 10 inches is a "suitable commercial width" for the strip, blank, and shovel blade, and that the thickened zone is "about 2 inches wide." From the language used, however, it is plain that these dimensions, absolute or comparative, are preferable, rather than critical, and it follows that the recited limitation of claim 3 is not a vital one.

Claim 2, in fact, contains the same substantial limitation, differently expressed. Claim 2 (Appellants' App. 16) thus recites that the longitudinal central portion is of sufficient width to include the frog and the line of junction between the blade and the shank. From Figs. 1 and 4 of the Finkes application, it appears that a portion of such width is approximately one-fifth the width of the shovel blade at the rear edge thereof. In this connection, it is noted that appellants (Brief, page 11, third paragraph) use substantially the language of claim 2 in setting forth the alleged requirements of claim 3. See also the opening statement on behalf of appellants below (Appellants' App. 43 and 44).

Inventive differences cannot reside in such mere matters of proportion as are expressed in both claims 2 and 3. It is submitted that the only significant concept, expressed in claim 3 and likewise in the unappealed claims 1, 2 and 4, is the broad concept of thickening the central, longitudinally extending portion of a hollow-back shovel to resist wear and prevent breakage. The Primary Examiner several times expressed this view (Appellants' App. 33 and 129), and the Board of Appeals, in effect, adopted it (Appellants' App. 131). Durell (Appellants' App. 93 and 94) so defines Finkes' concept.

Claim 3 defines a shovel. It does not define a process of making a shovel. For that reason, even if there had been any real difficulty in producing the shovel—and the testimony of Jones (Appellants' App. 53 to 60) sufficiently suggests that there was not—such a circumstance would be immaterial upon the question of the patentability of the shovel (*In re Decker,* 162 O. G. 999; 36 App. D. C. 104; *In re Von Bramer and Ruggles,* 53 U. S. P. Q. 345; 127 F. (2d) 149; 29 C. C. P. A. —, decided by the Court of Customs and Patent Appeals on April 27, 1942, and cases therein cited).

Claim 3 is either anticipated by or unpatentable over the prior art

2. The broad concept of a hollow-back shovel that is thickened centrally and longitudinally to resist wear and prevent breakage is disclosed fully in the Lowman patent (Appellants' App. 111) and in the Surbaugh patent (Appellants' App. 115 to 117). While the language used in the Lowman specification, and hereinabove quoted, is broad, it does suffice to anticipate this broad concept. To the mechanic skilled in the shovel art, it is thought the meaning of the Lowman patent would be entirely clear. That patent is addressed to the mechanic so skilled, and is to be interpreted from his standpoint (*Radtke Patents Corporation et al.* v. *Coe, et al.,* 535 O. G. 3; — App. D. C. —; 122 F. (2d) 937).

The Lowman patent (Appellants' App. 111) refers to the *rolling* of *sheet metal* of unequal thickness. The witness Jones (Appellants' App. 59), in attempting to give an unwarrantedly narrow interpretation to the term "sheet metal," which interpretation appellants adopt (Brief, pages 15 and 16), made a technical distinction between "strip" steel and "sheet" steel. "Sheet metal," he asserted, could not be rolled of unequal thickness, because "sheet metal" is rolled from a bar which is successively turned 90°; he said, "If you put a shape in it, as soon as you have turned it you have rolled the shape out." Lowman, of course, would suggest no such impractical procedure. He was using "sheet metal," in a generic sense, to include "strip" metal or steel. Lowman was using the term "sheet metal" in the same sense as Milligan uses the term "sheet steel" in his patent No. 1,898,590 (Appellants' App. 139, lines 28 and 29), and as Surbaugh does in his patent (Appellants' App. 116, lines 50 and 51).

The trial court correctly ruled (Appellants' App. 9) that:

> In order for this Lowman patent to have meaning, the term "sheet metal" would have to be construed as being generically used, and his reference to the rolling of "sheet metal" would include the rolling of a strip of steel of unequal thickness.

Appellants complain (Brief, page 11) that the pronounced rib 12 of the shovel illustrated by Surbaugh renders that shovel impractical. The point, however, is that the cross-sectional shape of the Surbaugh shovel is the equivalent, in a patentable sense, of the cross-sectional shape of the Finkes shovel. As the District Court ruled (Appellants' App. 11), a prior art patent anticipates the claims of a later applicant when it discloses the subject matter of the claims, notwithstanding that the device disclosed in the patent is not commercially practical and has not been exploited. In support of this ruling, there may be cited the decision of the U. S. Supreme Court in the case of *Hildreth* v. *Mastoras,* 257 U. S. 27. In 48 Corpus Juris, page 46, paragraph 48, it is stated:

> The mere fact that the subject matter of a prior patent has not been perfected into a practical and commercially successful art or instrument does not deprive it of effect as an anticipation.

Appellants also contend (Brief, page 11) that Surbaugh's purpose was entirely different from that of Finkes. This, however, cannot be gleaned from the specifications of Surbaugh's patent and Finkes' application. Both Surbaugh and Finkes use the term "reinforce" in explaining the purpose of the thickened central region. True, it may be that the rib 12 of Surbaugh does stiffen his shovel blade, but so does the thickened central region of Finkes' shovel blade. Both blades would be stiffer than the ordinary blade made of similar metal and similarly heat-treated. The springiness of a shovel blade, as Durell avers (Appellants' App. 99), is due to tempering.

If it were concluded that claim 3 is not anticipated by the patents to Lowman and Surbaugh, then it is submitted that this claim plainly lacks invention over these patents in view of the patent to Myers, No. 340,602 (Appellants' App. 112 to 114). As shown in Fig. 2 of the Myers patent, the cross-sectional shape of this patented shovel is quite similar to the shape of Finkes' shovel. Myers assertedly obtains (Appellants' App. 114, lines 17 to 21) two advantages from his construction, to wit: (1) Resistance to wear of the blade at its entering end, and (2) Strengthening of the blade at its connection with the straps, by which it is attached to the handle, and strengthening of the straps along their length. These advantages are obviously similar to the advantages claimed by Finkes for his shovel. The tendency of shovels to wear away at the entering end is, of course, present in both hollow-back and strap shovels, since this tendency is independent of the manner of connection of blade and handle, and appellants so concede (Brief, page 5). Thus, the thickening by Myers of his strap shovel at its entering end to promote resistance to wear would plainly indicate such thickening of a hollow-back shovel. Also, the thickening by Myers of his straps to strengthen the straps and their connection with the blade would strongly suggest the thickening of the frog, shank, and socket of a hollow-back shovel.

Appellants say (Brief, page 9) that Myers' shovel blank is forged. Myers, himself, recites (Appellants' App. 114, lines 36 and 37) that it may be "rolled." Appellants also are unable to understand how Myers could provide two straps for his shovel; but, as appears from his cross-examination (Appellants' App. 86), their expert witness, Sarver, did not share their mystification. Plainly, the second strap could be separately supplied and welded to the blank of Fig. 1, which includes one integral strap. For reasons already given, it is immaterial that Myers does not show how his shovel could be produced, and also immaterial that it purportedly was not exploited.

The Hassel French patent is important only to show that steel has been rolled in strip form to provide shovel blanks varying in thickness in transverse cross-section.

Appellants are not entitled to a patent containing claim 3

3. Appellants express the opinion (Brief, page 13) that there is at least a doubt as to claim 3 being unpatentable over the prior art. This professed doubt, they assert, should be resolved in their favor, citing *In re Coykendall,* 378 O. G. 254; 58 App. D. C. 280; 29 F. (2d) 868. With particular reference to the cited decision, this Court in its decision in the case of *Minnesota Mining and Manufacturing Company* v. *Coe* (533 O. G. 263; 73 App. D. C. 146; 118 F. (2d) 593, certiorari denied October 13, 1941), stated:

> Whatever else may be said of older decisions that, in appeals from the Patent Office, doubt was to be resolved in favor of the applicant, they are obviously not law in relation to appeals from the District Court.

This rule was repeated in the decision in *General Motors Corporation* v. *Coe* (534 O. G. 702; — App. D. C. —; 120 F. (2d) 736, certiorari denied November 29, 1941).

As they did before the tribunals of the Patent Office and in the District Court, appellants emphasize the commercial success of Finkes' shovel. The commercial success of that shovel and its superior quality are conceded. However, as the lower court held (Appellants' App. 11), commercial success is not a factor to be taken into consideration unless there is a doubt as to the presence of invention (*Freyn Engineering Co.* v. *Coe,* 456 O. G. 717; 69 App. D. C. 9; 79 F. (2d) 61; *Morrison* v. *Coe,* 532 O. G. 511; — App. D. C. —; 123 F. (2d) 793).

The Canadian Patent Office has granted a patent, No. 399,-891, which is a counterpart of the Finkes application involved in this appeal. However, as the lower court ruled (Appellants' App. 12), this circumstance has no bearing upon the right of appellants to receive a patent in the United States upon said

Finkes application. In support of this ruling, there may be cited the decisions of the Court of Customs and Patent Appeals in the cases of *In re Kluter,* 448 O. G. 213; 25 C. C. P. A. (Patents) 730; 92 F. (2d) 906, and *In re Kleine et al,* 473 O. G. 7; 23 C. C. P. A. (Patents) 1216; 83 F. (2d) 928.

CONCLUSION

It is submitted that the trial court properly found claim 3 to be unpatentable over the prior art. The judgment of the trial court, therefore, should be affirmed.

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